

=> d his

(FILE 'HOME' ENTERED AT 13:47:59 ON 31 OCT 2000)

FILE 'HCAPLUS' ENTERED AT 13:48:10 ON 31 OCT 2000

L1 221 S BRUNNER M?/AU
L2 45 S BOTTCHER A?/AU
L3 49 S BREITSCHIEDEL B?/AU
L4 52 S HALBRITTER K?/AU
L5 104 S HENKELMANN J?/AU
L6 16 S THIL L?/AU
L7 70 S PINKOS R?/AU
L8 1 S L1 AND L2 AND L3 AND L4 AND L5 AND L6 AND L7
SELECT RN L8 1

FILE 'REGISTRY' ENTERED AT 13:49:02 ON 31 OCT 2000

L9 35 S E1-35

FILE 'HCAPLUS' ENTERED AT 13:49:09 ON 31 OCT 2000

L10 1 S L8 AND L9

FILE 'REGISTRY' ENTERED AT 13:52:12 ON 31 OCT 2000

L11 STR
L12 50 S L11
L13 STR L11
L14 50 S L13
L15 STR L13
L16 50 S L15

FILE 'LREGISTRY' ENTERED AT 13:55:39 ON 31 OCT 2000

L17 285 S PHTHALIC ACID
L18 1 S PHTHALIC ACID/CN
L19 1 S ISOPHTHALIC ACID/CN
L20 1 S TEREPHTHALIC ACID/CN
L21 1 S TRIMELLITIC ACID/CN
L22 1 S TRIMESIC ACID/CN
L23 1 S PYROMELLITIC ACID/CN

FILE 'REGISTRY' ENTERED AT 13:57:17 ON 31 OCT 2000

L24 STR
L25 STR L24
L26 STR L24
L27 50 S L24 OR L25 OR L26
L28 95973 S L24 OR L25 OR L26 FUL
L29 STR L24
L30 STR L25
L31 STR L26
L32 STR L31
L33 STR L25
L34 STR L32
L35 50 S L29-L34 SSS SAM SUB=L28
L36 STR L29
L37 STR L30
L38 STR L31
L39 STR L32
L40 STR L33

Searched by John Dantzman 703-308-4488

L41 STR L34
L42 50 S L36-L41 SSS SAM SUB=L28
L43 STR L36
L44 STR L37
L45 STR L38
L46 STR L39
L47 STR L40
L48 STR L41
L49 63706 S L43-L48 SSS FUL SUB=L28
SAV TEMP L49 KHARE581/A

FILE 'CAPLUS' ENTERED AT 14:22:05 ON 31 OCT 2000

FILE 'HCAPLUS' ENTERED AT 14:22:11 ON 31 OCT 2000

L50 145711 S L49
L51 612 S L50(L)HYDROGENAT?
L52 96 S L51 AND (FE OR CO OR RU OR RH OR OS OR IR)
L53 52 S L51 AND (IRON OR COBALT? OR RUTHEN?)
L54 24 S L51 AND (RHODIUM OR OSMIUM OR IRIDIUM)
L55 15 S L51 AND GROUP VIII
L56 121 S L52-L55
L57 1 S L56 AND (MACROPORE OR (MACRO OR LARGE) (4A) PORE)
L58 1 S L56 AND (MACROPORE OR (MACRO OR LARGE) (4A) (PORE OR POROUS))
L59 8 S L56 AND GROUP VIII (9A)HYDROGENAT?(3A)CATALY?
L60 21 S L56 AND (RHODIUM OR OSMIUM OR
IRIDIUM) (9A)HYDROGENAT?(3A)CATA
L61 39 S L56 AND (IRON OR COBALT? OR RUTHEN?
) (9A)HYDROGENAT?(3A)CATAL
L62 17 S L56 AND (FE OR CO OR RU OR RH OR OS OR
IR) (9A)HYDROGENAT?(3A)
L63 61 S L59-L62
L64 1 S L63 AND L58

FILE 'REGISTRY' ENTERED AT 14:34:20 ON 31 OCT 2000

FILE 'HCAPLUS' ENTERED AT 14:34:25 ON 31 OCT 2000

SET SMARTSELECT ON
L65 SEL L63 1- RN : 693 TERMS
SET SMARTSELECT OFF

FILE 'REGISTRY' ENTERED AT 14:34:30 ON 31 OCT 2000

L66 692 S L65
L67 58 S L66 AND L28

FILE 'HCAPLUS' ENTERED AT 14:35:18 ON 31 OCT 2000

L68 59 S L63 AND L67
L69 1 S L58 AND L67
L70 58 S L68 NOT L69
L71 2 S L56 AND (MACRO?)
L72 1 S L56 AND LARGE
L73 3 S L71 OR L72

FILE 'WPIDS, USPATFULL, JICST-EPLUS' ENTERED AT 14:45:26 ON 31 OCT 2000

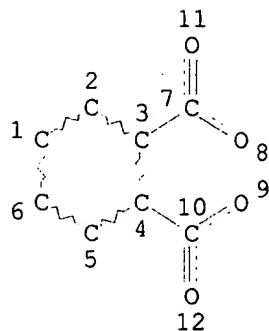
L74 62133 S BENZENEPOLYCARBOXYLIC? OR PHTHALIC OR ISOPHTHALIC OR
TEREPHHA
L75 19938 S TRIMELLITIC OR TRIMESIC OR HEMIMELLITIC OR PYROMELLITIC
L76 514 S (L74 OR L74) (9A)HYDROGENAT?

Searched by John Dantzman 703-308-4488

L77 185 S L76 AND (MACRO? OR LARGE)
L78 2 S L76 AND (MACRO? OR LARGE) (1A) (PORE OR POROUS)
L79 1 S L76 AND MACROPOROUS?
L80 3 S L78 OR L79
L81 3 DUP REMOV L80 (0 DUPLICATES REMOVED)

=> d que 149

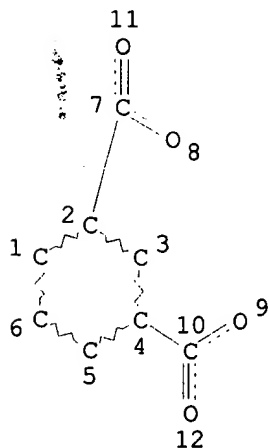
L24 STR



NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC I
NUMBER OF NODES IS 12

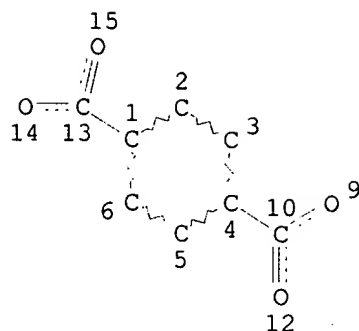
STEREO ATTRIBUTES: NONE
L25 STR



NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC I
NUMBER OF NODES IS 12

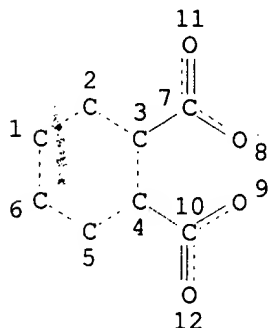
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L26 STR



NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC I
NUMBER OF NODES IS 12

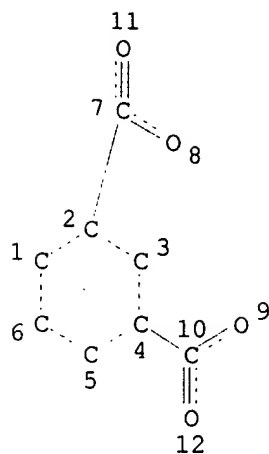
STEREO ATTRIBUTES: NONE
L28 95973 SEA FILE=REGISTRY SSS FUL L24 OR L25 OR L26
L43 STR



NODE ATTRIBUTES:
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CONNECT IS E2 RC AT 2
CONNECT IS E2 RC AT 5
CONNECT IS E2 RC AT 6
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC I
NUMBER OF NODES IS 12

STEREO ATTRIBUTES: NONE
L44 STR



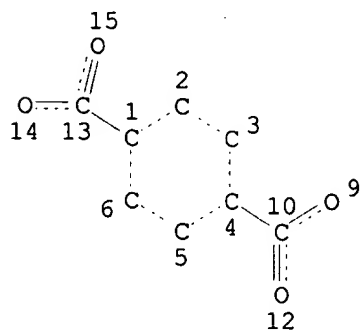
NODE ATTRIBUTES:

CONNECT IS E2 RC AT 1
 CONNECT IS E2 RC AT 3
 CONNECT IS E2 RC AT 5
 CONNECT IS E2 RC AT 6
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RSPEC I
 NUMBER OF NODES IS 12

STEREO ATTRIBUTES: NONE
 L45 STR



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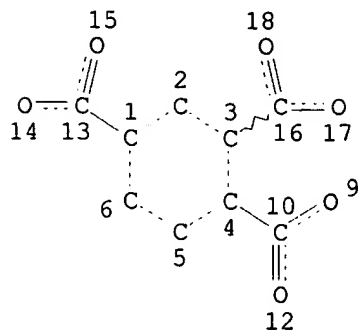
CONNECT IS E2 RC AT 2
 CONNECT IS E2 RC AT 3
 CONNECT IS E2 RC AT 5
 CONNECT IS E2 RC AT 6
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RSPEC I

NUMBER OF NODES IS 12

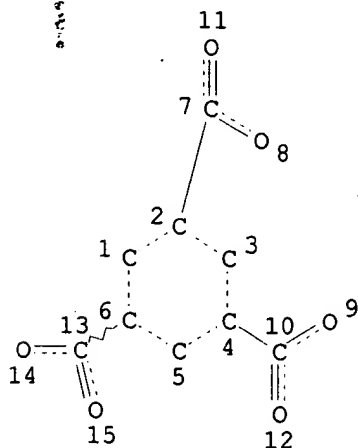
STEREO ATTRIBUTES: NONE
L46 STR



NODE ATTRIBUTES:
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CONNECT IS E2 RC AT 5
CONNECT IS E2 RC AT 6
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC I
NUMBER OF NODES IS 15

STEREO ATTRIBUTES: NONE
L47 STR



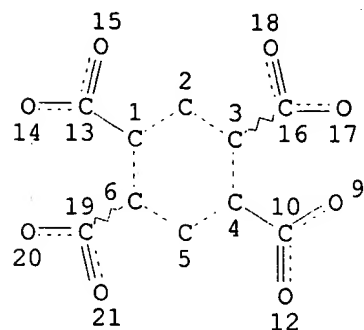
NODE ATTRIBUTES:
CONNECT IS E2 RC AT 1
CONNECT IS E2 RC AT 3
CONNECT IS E2 RC AT 5
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

Searched by John Dantzman 703-308-4488

RSPEC I
NUMBER OF NODES IS 15

STEREO ATTRIBUTES: NONE
L48 STR



NODE ATTRIBUTES:
CONNECT IS E2 RC AT 2
CONNECT IS E2 RC AT 5
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC I
NUMBER OF NODES IS 18

STEREO ATTRIBUTES: NONE
L49 63706 SEA FILE=REGISTRY SUB=L28 SSS FUL (L43 OR L44 OR L45 OR L46
OR L47 OR L48)

=> d bib abs hitstr 169

L69 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2000 ACS

AN 1999:409576 HCAPLUS

DN 131:45534

TI Method and macroporous catalysts for the hydrogenation of dialkyl benzenedicarboxylates into dialkyl cyclohexanedicarboxylate plasticizers
IN Brunner, Melanie; Boettcher, Arnd; Breitscheidel, Boris; Halbritter, Klaus; Henkelmann, Jochem; Thil, Lucien; Pinkos, Rolf

PA BASF A.-G., Germany

SO Ger. Offen., 8 pp.

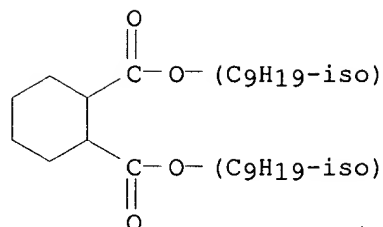
CODEN: GWXXBX

DT Patent

LA German

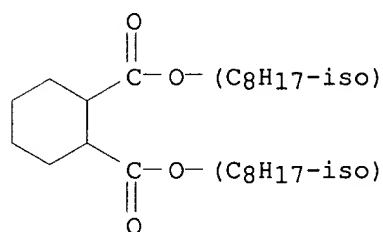
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19756913	A1	19990624	DE 1997-19756913	19971219
	WO 9932427	A1	19990701	WO 1998-EP8346	19981218
	W: AU, BR, CA, CN, ID, IN, JP, KR, MX, SG, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	AU 9926133	A1	19990712	AU 1999-26133	19981218
	EP 1042273	A1	20001011	EP 1998-966901	19981218
	R: BE, DE, ES, FR, GB, IT				
PRAI	DE 1997-19756913		19971219		
	DE 1998-19832088		19980716		
	WO 1998-EP8346		19981218		
AB	Dialkyl cyclohexanedicarboxylates (e.g., diisooctyl 1,2-cyclohexanedicarboxylate), useful as plasticizers, are prepd. in high yield and selectivity with reduced byproduct formation by the hydrogenation of the corresponding dialkyl benzenedicarboxylates (e.g., diisooctyl phthalate) in the presence of a catalyst comprising Ru alone or in addn. to .gtoreq.1 of Group IB, VIIB, or VIII metal(s) on a macroporous support (e.g., alumina) having an av. pore diam. of .gtoreq.50 nm, a BET surface area of .ltoreq.30 m ² /g, a catalytically active metal(s) content of 0.01-30%, and a ratio of the surface area of the catalytically active metal(s) to that of the carrier of <0.05. The catalysts have 10-50% of their pore vol. due to macropores having a diam. of 50-10,000 nm and 50-90% of their pore vol. due to mesopores with a diam. of 2-50 nm, the sum total of both types of pore areas being 100%.				
IT	166412-78-8P 227472-91-5P 227472-92-6P				
	RL: MOA (Modifier or additive use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)				
	(method and macroporous catalysts for the hydrogenation of dialkyl benzenedicarboxylates into dialkyl cyclohexanedicarboxylate plasticizers)				
RN	166412-78-8 HCAPLUS				
CN	1,2-Cyclohexanedicarboxylic acid, diisononyl ester (9CI) (CA INDEX NAME)				



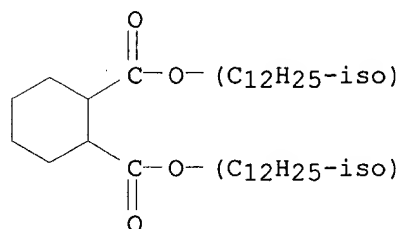
RN 227472-91-5 HCAPLUS

CN 1,2-Cyclohexanedicarboxylic acid, diisooctyl ester (9CI) (CA INDEX NAME)



RN 227472-92-6 HCAPLUS

CN 1,2-Cyclohexanedicarboxylic acid, diisododecyl ester (9CI) (CA INDEX NAME)



IT 100-21-0D, Terephthalic acid, dialkyl esters 117-81-7,

Diisooctyl phthalate 120-61-6 27554-06-9, Diisododecyl

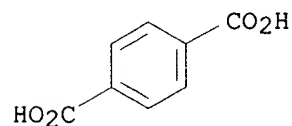
phthalate 28553-12-0, Diisononyl phthalate

RL: RCT (Reactant)

(method and macroporous catalysts for the **hydrogenation** of dialkyl benzenedicarboxylates into dialkyl cyclohexanedicarboxylate plasticizers)

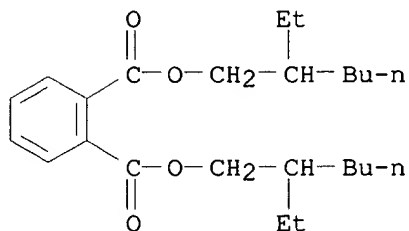
RN 100-21-0 HCAPLUS

CN 1,4-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)



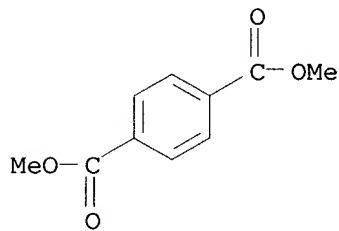
RN 117-81-7 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester (9CI) (CA INDEX NAME)



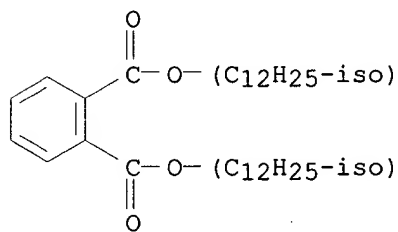
RN 120-61-6 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, dimethyl ester (9CI) (CA INDEX NAME)



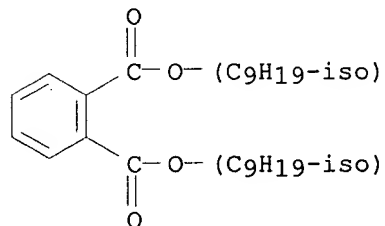
RN 27554-06-9 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, diisododecyl ester (9CI) (CA INDEX NAME)



RN 28553-12-0 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, diisononyl ester (9CI) (CA INDEX NAME)



KHARE

09/581843

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(FILE 'HOME' ENTERED AT 13:47:59 ON 31 OCT 2000)

FILE 'HCAPLUS' ENTERED AT 13:48:10 ON 31 OCT 2000

L1 221 S BRUNNER M?/AU
L2 45 S BOTTCHE A?/AU
L3 49 S BREITSCHDEL B?/AU
L4 52 S HALBRITTER K?/AU
L5 104 S HENKELMANN J?/AU
L6 16 S THIL L?/AU
L7 70 S PINKOS R?/AU
L8 1 S L1 AND L2 AND L3 AND L4 AND L5 AND L6 AND L7
SELECT RN L8 1

FILE 'REGISTRY' ENTERED AT 13:49:02 ON 31 OCT 2000

L9 35 S E1-35

FILE 'HCAPLUS' ENTERED AT 13:49:09 ON 31 OCT 2000

L10 1 S L8 AND L9

Inventor Search

=> d bib abs hitstr

L10 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2000 ACS

AN 1999:421635 HCAPLUS

DN 131:74462

TI Hydrogenation of benzenepolycarboxylic acids or their derivatives by use of macroporous catalysts

IN Brunner, Melanie; Bottcher, Arnd; Breitscheidel, Boris; Halbritter, Klaus; Henkelmann, Jochem; Thil, Lucien; Pinkos, Rolf

PA BASF Aktiengesellschaft, Germany

SO PCT Int. Appl., 43 pp.

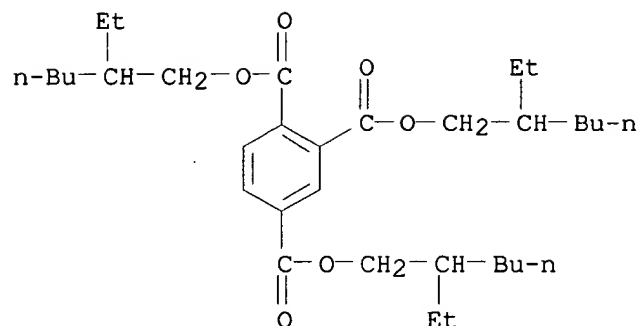
CODEN: PIXXD2

DT Patent

LA German

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9932427	A1	19990701	WO 1998-EP8346	19981218
	W: AU, BR, CA, CN, ID, IN, JP, KR, MX, SG, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	DE 19756913	A1	19990624	DE 1997-19756913	19971219
	DE 19832088	A1	20000120	DE 1998-19832088	19980716
	AU 9926133	A1	19990712	AU 1999-26133	19981218
	EP 1042273	A1	20001011	EP 1998-966901	19981218
	R: BE, DE, ES, FR, GB, IT				
PRAI	DE 1997-19756913		19971219		
	DE 1998-19832088		19980716		
	WO 1998-EP8346		19981218		
AB	A benzenepolycarboxylic acid and/or deriv. thereof is hydrogenated with a gas contg. H in the presence of a catalyst comprising a Group VIII metal deposited alone or together with .gtoreq.1 Group IB and/or VIIB metal on				
a	macroporous support. Preferably the metal(s) represent(s) 0.01-30% of				
the	catalyst wt., the principal metal is Ru, and the support has av. pore diam. .gtoreq.50 nm and BET surface .ltoreq.30 m2/g. The hydrogenated products are used as plasticizers in plastics. Thus, a catalyst contg. 0.05% Ru was obtained by impregnating Al2O3 having BET surface 238 m2/g and pore vol. 0.45 mL/g with a 0.8% Ru(NO3)3 soln., drying at				
120.degree.,	and activating in a H atm. at 200.degree.. Hydrogenation of 197 g diisooctyl phthalate over 10 g of the catalyst at 80.degree./200 bars for 4 h gave diisooctyl hexahydrophthalate in 99.7% yield at 100% conversion.				
IT	3319-31-1, Tris(2-ethylhexyl) trimellitate				
	RL: RCT (Reactant)				
	(TOTM-I; hydrogenation of benzenepolycarboxylic acids or their derivs. by use of macroporous catalysts)				
RN	3319-31-1 HCAPLUS				
CN	1,2,4-Benzenetricarboxylic acid, tris(2-ethylhexyl) ester (7CI, 8CI, 9CI) (CA INDEX NAME)				



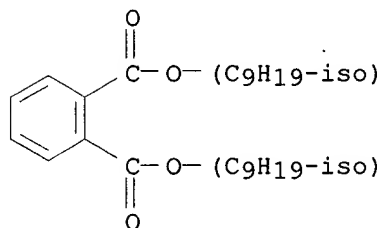
IT 28553-12-0, Diisononyl phthalate

RL: RCT (Reactant)

(Vestinol 9; hydrogenation of benzenepolycarboxylic acids or their derivs. by use of macroporous catalysts)

RN 28553-12-0 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, diisononyl ester (9CI) (CA INDEX NAME)



IT 7440-44-0, Activated carbon, uses

RL: CAT (Catalyst use); USES (Uses)

(activated, carrier; hydrogenation of benzenepolycarboxylic acids or their derivs. by use of macroporous catalysts)

RN 7440-44-0 HCAPLUS

CN Carbon (7CI, 8CI, 9CI) (CA INDEX NAME)

C

IT 409-21-2, Silicon carbide, uses 1309-48-4, Magnesium

oxide, uses 1314-13-2, Zinc oxide, uses 1314-23-4, Zirconium dioxide, uses 1344-28-1, Aluminum oxide (Al₂O₃), uses 7631-86-9, Silicon dioxide, uses 13463-67-7, Titanium dioxide, uses

RL: CAT (Catalyst use); USES (Uses)

(carrier; hydrogenation of benzenepolycarboxylic acids or their derivs. by use of macroporous catalysts)

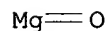
RN 409-21-2 HCAPLUS

CN Silicon carbide (SiC) (8CI, 9CI) (CA INDEX NAME)

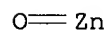
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

Searched by John Dantzman 703-308-4488

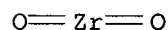
RN 1309-48-4 HCAPLUS
CN Magnesium oxide (MgO) (9CI) (CA INDEX NAME)



RN 1314-13-2 HCAPLUS
CN Zinc oxide (ZnO) (9CI) (CA INDEX NAME)



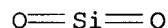
RN 1314-23-4 HCAPLUS
CN Zirconium oxide (ZrO2) (8CI, 9CI) (CA INDEX NAME)



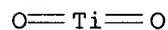
RN 1344-28-1 HCAPLUS
CN Aluminum oxide (Al2O3) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 7631-86-9 HCAPLUS
CN Silica (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)



IT 7440-18-8, Ruthenium, uses
RL: CAT (Catalyst use); USES (Uses)
(hydrogenation of benzenepolycarboxylic acids or their derivs. by use
of macroporous catalysts)
RN 7440-18-8 HCAPLUS
CN Ruthenium (8CI, 9CI) (CA INDEX NAME)

Ru

IT 4336-20-3P, Dimethyl hexahydrophthalate 52831-11-5P,
Trimethyl hexahydrotrimesate 67208-88-2P, Tris(2-ethylhexyl)
hexahydrotrimellitate 84731-64-6P, Diisodecyl hexahydrophthalate
92298-55-0P, Tetramethyl hexahydropyromellitate
166412-78-8P, Diisononyl hexahydrophthalate 185855-30-5P
, Trimethyl hexahydrotrimellitate 192728-83-9P
227472-91-5P 227472-92-6P, Diisododecyl

Searched by John Dantzman 703-308-4488

hexahydrophthalate 228853-14-3P, Diisopentyl
1,2-cyclohexanedicarboxylate 228853-15-4P 228873-52-7DP
, Palatinol 9P, hexahydro deriv. 228873-60-7DP, Linplast 68TM,
hexahydro deriv.

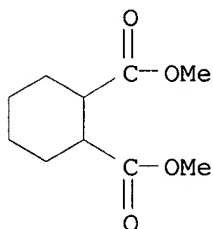
RL: IMF (Industrial manufacture); PREP (Preparation)

(hydrogenation of benzenepolycarboxylic acids or their derivs. by use
of macroporous catalysts)

RN 4336-20-3 HCAPLUS

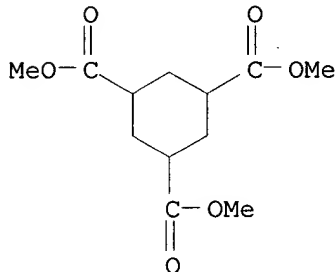
CN 1,2-Cyclohexanedicarboxylic acid, dimethyl ester (6CI, 7CI, 8CI, 9CI)
(CA

INDEX NAME)



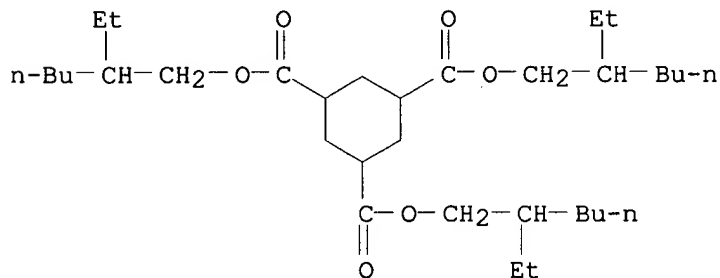
RN 52831-11-5 HCAPLUS

CN 1,3,5-Cyclohexanetricarboxylic acid, trimethyl ester (6CI, 7CI, 9CI) (CA
INDEX NAME)



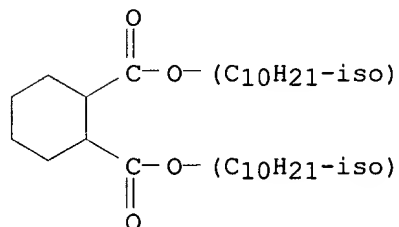
RN 67208-88-2 HCAPLUS

CN 1,3,5-Cyclohexanetricarboxylic acid, tris(2-ethylhexyl) ester (9CI) (CA
INDEX NAME)

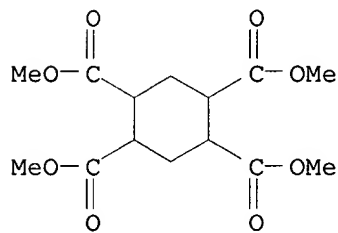


RN 84731-64-6 HCAPLUS

CN 1,2-Cyclohexanedicarboxylic acid, diisodecyl ester (9CI) (CA INDEX NAME)

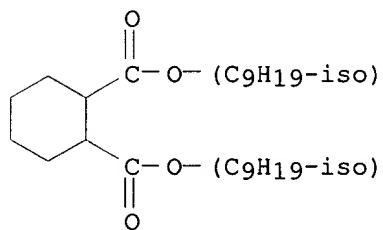


RN 92298-55-0 HCAPLUS

CN 1,2,4,5-Cyclohexanetetracarboxylic acid, tetramethyl ester (6CI, 7CI, 9CI)
(CA INDEX NAME)

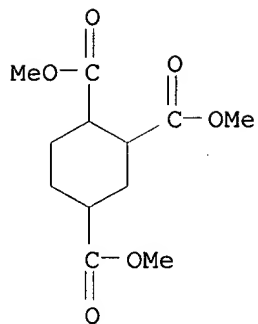
RN 166412-78-8 HCAPLUS

CN 1,2-Cyclohexanedicarboxylic acid, diisononyl ester (9CI) (CA INDEX NAME)



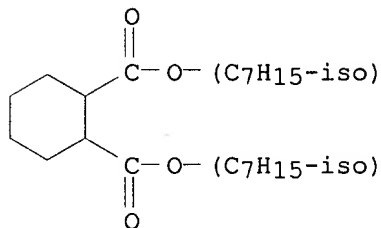
RN 185855-30-5 HCAPLUS

CN 1,2,4-Cyclohexanetricarboxylic acid, trimethyl ester (9CI) (CA INDEX NAME)



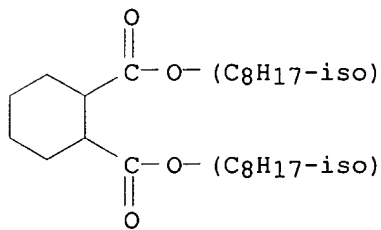
RN 192728-83-9 HCAPLUS

CN 1,2-Cyclohexanedicarboxylic acid, diisohexyl ester (9CI) (CA INDEX NAME)



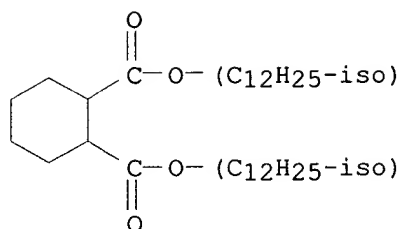
RN 227472-91-5 HCAPLUS

CN 1,2-Cyclohexanedicarboxylic acid, diisooctyl ester (9CI) (CA INDEX NAME)

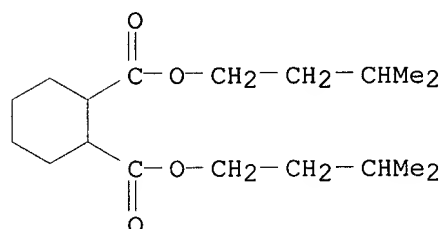


RN 227472-92-6 HCAPLUS

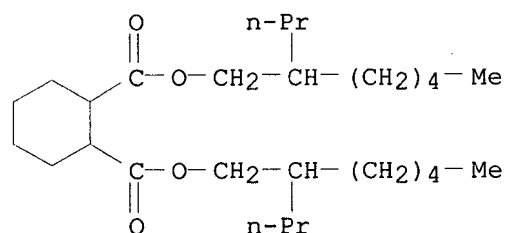
CN 1,2-Cyclohexanedicarboxylic acid, diisdodecyl ester (9CI) (CA INDEX NAME)



RN 228853-14-3 HCAPLUS
 CN 1,2-Cyclohexanedicarboxylic acid, bis(3-methylbutyl) ester (9CI) (CA INDEX NAME)



RN 228853-15-4 HCAPLUS
 CN 1,2-Cyclohexanedicarboxylic acid, bis(2-propylheptyl) ester (9CI) (CA INDEX NAME)



RN 228873-52-7 HCAPLUS
 CN Palatinol 9P (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 228873-60-7 HCAPLUS
 CN Linplast 68TM (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT 88-99-3D, 1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters 117-81-7, Diisooctyl phthalate 131-11-3, Dimethyl phthalate 605-50-5, Diisopentyl phthalate 635-10-9, Tetramethyl pyromellitate 2459-10-1, Trimethyl trimellitate 2672-58-4, Trimethyl trimesate 26761-40-0, Jayflex DIDP 27554-06-9, Diisdodecyl phthalate 53306-54-0 228873-52-7, Palatinol 9P 228873-60-7, Linplast 68TM

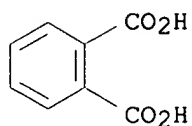
Searched by John Dantzman 703-308-4488

RL: RCT (Reactant)

(hydrogenation of benzenepolycarboxylic acids or their derivs. by use of macroporous catalysts)

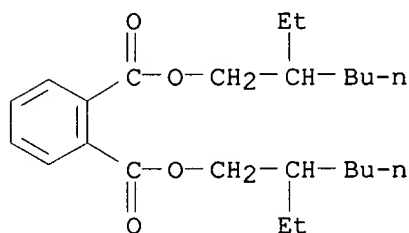
RN 88-99-3 HCAPLUS

CN 1,2-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)



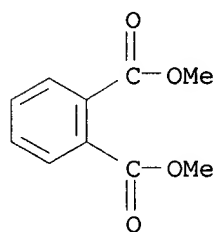
RN 117-81-7 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester (9CI) (CA INDEX NAME)



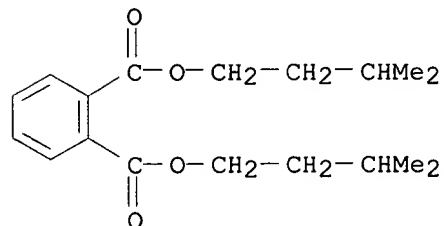
RN 131-11-3 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, dimethyl ester (9CI) (CA INDEX NAME)

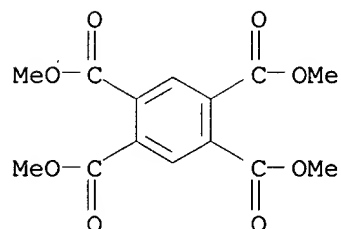


RN 605-50-5 HCAPLUS

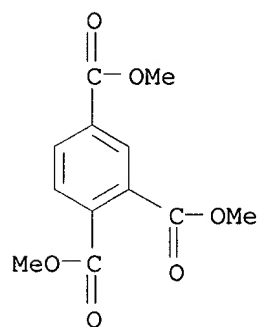
CN 1,2-Benzenedicarboxylic acid, bis(3-methylbutyl) ester (9CI) (CA INDEX NAME)



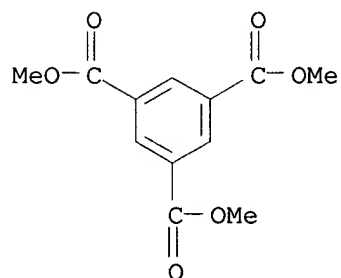
RN 635-10-9 HCAPLUS

CN 1,2,4,5-Benzenetetracarboxylic acid, tetramethyl ester (7CI, 8CI, 9CI)
(CA INDEX NAME)

RN 2459-10-1 HCAPLUS

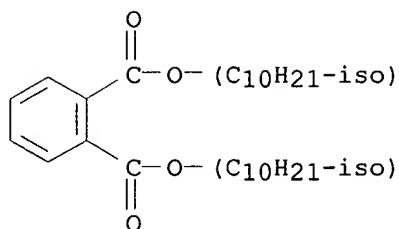
CN 1,2,4-Benzenetricarboxylic acid, trimethyl ester (7CI, 8CI, 9CI) (CA
INDEX NAME)

RN 2672-58-4 HCAPLUS

CN 1,3,5-Benzenetricarboxylic acid, trimethyl ester (7CI, 8CI, 9CI) (CA
INDEX NAME)

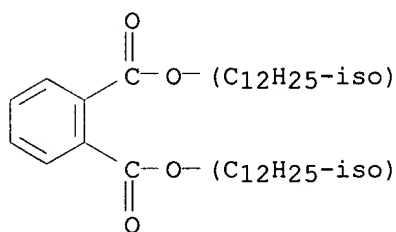
RN 26761-40-0 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, diisodecyl ester (9CI) (CA INDEX NAME)



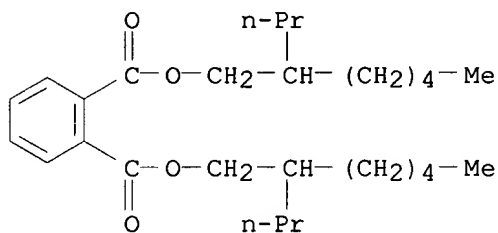
RN 27554-06-9 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, diisododecyl ester (9CI) (CA INDEX NAME)



RN 53306-54-0 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, bis(2-propylheptyl) ester (9CI) (CA INDEX NAME)



RN 228873-52-7 HCAPLUS

CN Palatinol 9P (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 228873-60-7 HCAPLUS

CN Linplast 68TM (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RE.CNT 6

RE

(1) Bruce, L; US 5286898 A 1994 HCAPLUS

(2) New Japan Chemical Co Ltd; JP 06306252 A 1994

(3) New Japan Chemical Co Ltd; JP 07011074 A 1995

(4) New Japan Chemical Co Ltd; WO 9721792 A 1997

(5) Towa Chemical Industry Co Ltd; EP 0603825 A 1994

ALL CITATIONS AVAILABLE IN THE RE FORMAT

KHARE

09/581843

Page 12

=> d bib abs hitstr

L73 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2000 ACS

AN 1999:421635 HCAPLUS

DN 131:74462

TI Hydrogenation of benzenepolycarboxylic acids or their derivatives by use of **macroporous** catalysts

IN Brunner, Melanie; Bottcher, Arnd; Breitscheidel, Boris; Halbritter, Klaus;

Henkelmann, Jochem; Thil, Lucien; Pinkos, Rolf

PA BASF Aktiengesellschaft, Germany

SO PCT Int. Appl., 43 pp.

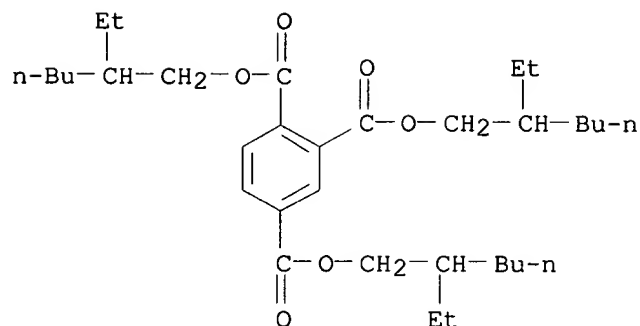
CODEN: PIXXD2

DT Patent

LA German

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9932427	A1	19990701	WO 1998-EP8346	19981218
	W: AU, BR, CA, CN, ID, IN, JP, KR, MX, SG, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	DE 19756913	A1	19990624	DE 1997-19756913	19971219
	DE 19832088	A1	20000120	DE 1998-19832088	19980716
	AU 9926133	A1	19990712	AU 1999-26133	19981218
	EP 1042273	A1	20001011	EP 1998-966901	19981218
	R: BE, DE, ES, FR, GB, IT				
PRAI	DE 1997-19756913		19971219		
	DE 1998-19832088		19980716		
	WO 1998-EP8346		19981218		
AB	A benzenepolycarboxylic acid and/or deriv. thereof is hydrogenated with a gas contg. H in the presence of a catalyst comprising a Group VIII metal deposited alone or together with .gtoreq.1 Group IB and/or VIIB metal on a macroporous support. Preferably the metal(s) represent(s) 0.01-30% of the catalyst wt., the principal metal				
is	Ru , and the support has av. pore diam. .gtoreq.50 nm and BET surface .ltoreq.30 m ² /g. The hydrogenated products are used as plasticizers in plastics. Thus, a catalyst contg. 0.05% Ru was obtained by impregnating Al ₂ O ₃ having BET surface 238 m ² /g and pore vol. 0.45 mL/g with a 0.8% Ru (NO ₃) ₃ soln., drying at 120.degree., and activating in a H atm. at 200.degree.. Hydrogenation of 197 g diisooctyl phthalate over 10 g of the catalyst at 80.degree./200 bars for 4 h gave diisooctyl hexahydrophthalate in 99.7% yield at 100% conversion.				
IT	3319-31-1 , Tris(2-ethylhexyl) trimellitate				
	RL: RCT (Reactant)				
	(TOTM-I; hydrogenation of benzenepolycarboxylic acids or their derivs. by use of macroporous catalysts)				
RN	3319-31-1 HCAPLUS				
CN	1,2,4-Benzenetricarboxylic acid, tris(2-ethylhexyl) ester (7CI, 8CI, 9CI) (CA INDEX NAME)				



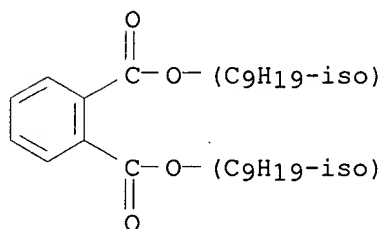
IT 28553-12-0, Diisononyl phthalate

RL: RCT (Reactant)

(Vestinol 9; **hydrogenation** of benzenepolycarboxylic acids or their derivs. by use of **macroporous** catalysts)

RN 28553-12-0 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, diisononyl ester (9CI) (CA INDEX NAME)



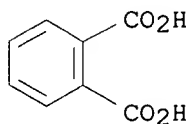
IT 88-99-3D, 1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters 117-81-7, Diisooctyl phthalate 131-11-3, Dimethyl phthalate 605-50-5, Diisopentyl phthalate 635-10-9, Tetramethyl pyromellitate 2459-10-1, Trimethyl trimellitate 2672-58-4, Trimethyl trimesate 26761-40-0, Jayflex DIDP 27554-06-9, Diisododecyl phthalate 53306-54-0

RL: RCT (Reactant)

(**hydrogenation** of benzenepolycarboxylic acids or their derivs. by use of **macroporous** catalysts)

RN 88-99-3 HCAPLUS

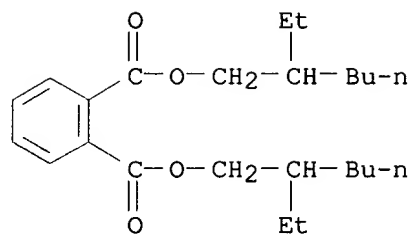
CN 1,2-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)



RN 117-81-7 HCAPLUS

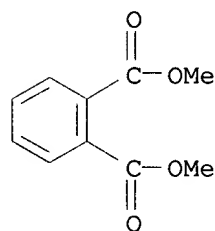
CN 1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester (9CI) (CA INDEX NAME)

Searched by John Dantzman 703-308-4488



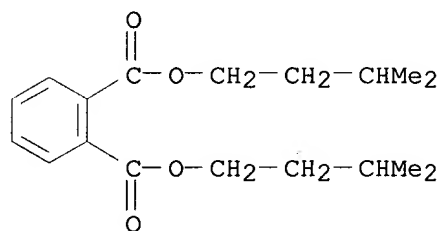
RN 131-11-3 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, dimethyl ester (9CI) (CA INDEX NAME)



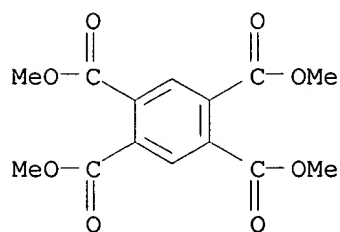
RN 605-50-5 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, bis(3-methylbutyl) ester (9CI) (CA INDEX NAME)



RN 635-10-9 HCAPLUS

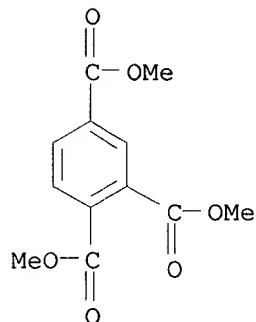
CN 1,2,4,5-Benzenetetracarboxylic acid, tetramethyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 2459-10-1 HCAPLUS

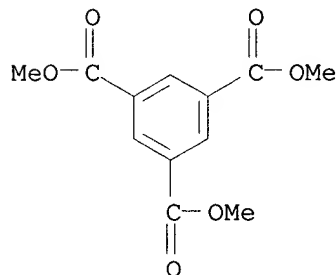
Searched by John Dantzman 703-308-4488

CN 1,2,4-Benzenetricarboxylic acid, trimethyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



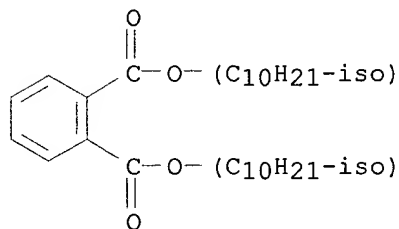
RN 2672-58-4 HCAPLUS

CN 1,3,5-Benzenetricarboxylic acid, trimethyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



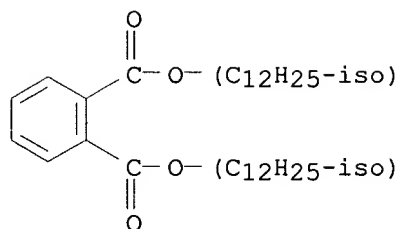
RN 26761-40-0 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, diisodecyl ester (9CI) (CA INDEX NAME)



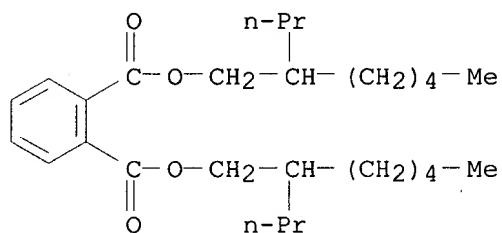
RN 27554-06-9 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, diisdodecyl ester (9CI) (CA INDEX NAME)



RN 53306-54-0 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, bis(2-propylheptyl) ester (9CI) (CA INDEX NAME)



RE.CNT 6

RE

- (1) Bruce, L; US 5286898 A 1994 HCAPLUS
 - (2) New Japan Chemical Co Ltd; JP 06306252 A 1994
 - (3) New Japan Chemical Co Ltd; JP 07011074 A 1995
 - (4) New Japan Chemical Co Ltd; WO 9721792 A 1997
 - (5) Towa Chemical Industry Co Ltd; EP 0603825 A 1994
- ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d bib abs hitstr 2

L73 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2000 ACS

AN 1999:409576 HCAPLUS

DN 131:45534

TI Method and **macroporous** catalysts for the hydrogenation of dialkyl benzenedicarboxylates into dialkyl cyclohexanedicarboxylate plasticizers

IN Brunner, Melanie; Boettcher, Arnd; Breitscheidel, Boris; Halbritter, Klaus; Henkelmann, Jochem; Thil, Lucien; Pinkos, Rolf

PA BASF A.-G., Germany

SO Ger. Offen., 8 pp.

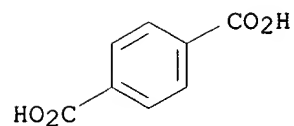
CODEN: GWXXBX

DT Patent

LA German

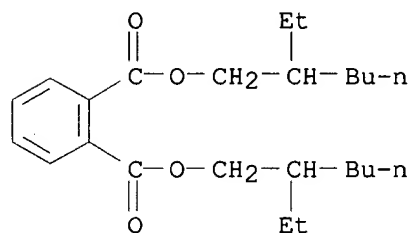
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	DE 19756913	A1	19990624	DE 1997-19756913	19971219
	WO 9932427	A1	19990701	WO 1998-EP8346	19981218
	W: AU, BR, CA, CN, ID, IN, JP, KR, MX, SG, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	AU 9926133	A1	19990712	AU 1999-26133	19981218
	EP 1042273	A1	20001011	EP 1998-966901	19981218
	R: BE, DE, ES, FR, GB, IT				
PRAI	DE 1997-19756913		19971219		
	DE 1998-19832088		19980716		
	WO 1998-EP8346		19981218		
AB	Dialkyl cyclohexanedicarboxylates (e.g., diisooctyl 1,2-cyclohexanedicarboxylate), useful as plasticizers, are prepd. in high yield and selectivity with reduced byproduct formation by the hydrogenation of the corresponding dialkyl benzenedicarboxylates (e.g., diisooctyl phthalate) in the presence of a catalyst comprising Ru alone or in addn. to .gtoreq.1 of Group IB, VIIB, or VIII metal(s) on a macroporous support (e.g., alumina) having an av. pore diam. of .gtoreq.50 nm, a BET surface area of .ltoreq.30 m2/g, a catalytically active metal(s) content of 0.01-30%, and a ratio of the surface area of the catalytically active metal(s) to that of the carrier of <0.05. The catalysts have 10-50% of their pore vol. due to macropores having a diam. of 50-10,000 nm and 50-90% of their pore vol. due to mesopores with a diam. of 2-50 nm, the sum total of both types of pore areas being 100%.				
IT	100-21-0D, Terephthalic acid, dialkyl esters 117-81-7, Diisooctyl phthalate 120-61-6 27554-06-9, Diisododecyl phthalate 28553-12-0, Diisononyl phthalate				
	RL: RCT (Reactant)				
	(method and macroporous catalysts for the				
	hydrogenation of dialkyl benzenedicarboxylates into dialkyl cyclohexanedicarboxylate plasticizers)				
RN	100-21-0 HCAPLUS				
CN	1,4-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)				



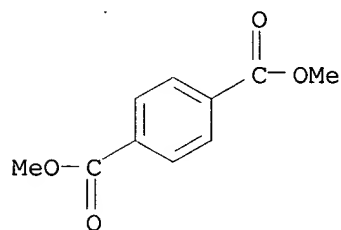
RN 117-81-7 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester (9CI) (CA INDEX NAME)



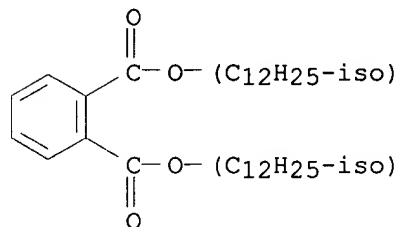
RN 120-61-6 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, dimethyl ester (9CI) (CA INDEX NAME)



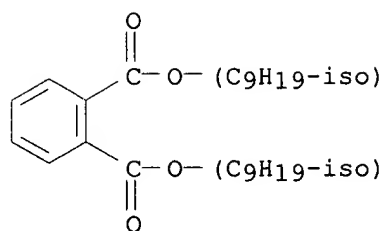
RN 27554-06-9 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, diisododecyl ester (9CI) (CA INDEX NAME)



RN 28553-12-0 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, diisononyl ester (9CI) (CA INDEX NAME)



=> d bib abs hitstr 3

L73 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2000 ACS

AN 1984:86427 HCAPLUS

DN 100:86427

TI Property relationships in dimer acid-modified copolyesters of poly(1,4-cyclohexylene dimethylene terephthalate) and poly(1,4-cyclohexylene dimethylene 1,4-cyclohexanedicarboxylate)

AU Fagerburg, David R.

CS Eastman Chem. Div., Eastman Kodak Co., Kingsport, TN, 37662, USA

SO J. Polym. Sci., Polym. Chem. Ed. (1984), 22(1), 171-83

CODEN: JPLCAT; ISSN: 0449-296X

DT Journal

LA English

AB Dimer acid-modified copolyesters based on 1,4-cyclohexanedimethanol (I) and either terephthalic acid (II) or trans-1,4-cyclohexanedicarboxylic acid (III) were examd. Both series produced clear, flexible materials with phys. properties changing regularly with changing modifier levels. Yield stress, elongation at break, and Young's modulus showed linear correlations of log property vs. vol. fraction of I-dimer acid segments

in

accord with the logarithmic rule of mixts. Annealing the I-II based copolyesters caused little or no change in properties. Annealing the I-III based copolyesters gave similar results except for a **large** decrease in the modulus; the higher the dimer acid level, the larger the decrease in modulus. The d. measurements, the x-ray pattern, and the dynamic mech. anal. at 110 Hz before and after the annealing treatment supported the hypothesis that the modulus decrease resulted from domain perfection in the copolyester induced by the annealing process.

Transmission electron-microscope examn. of **osmium**

tetroxide-stained films supported this hypothesis, although initial results were not repeatable.

IT 120-61-6DP, polymer with 1,4-cyclohexanedimethanol and

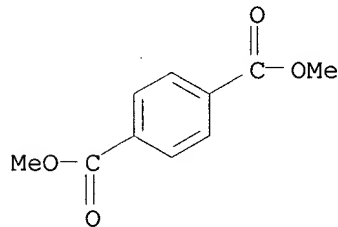
hydrogenated fatty acid dimer

RL: PREP (Preparation)

(prepn. of)

RN 120-61-6 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, dimethyl ester (9CI) (CA INDEX NAME)



=> d bib abs hitstr

L81 ANSWER 1 OF 3 USPATFULL

AN 1998:75773 USPATFULL

TI Process for the preparation of N-substituted cyclic imides

IN Groth, Torsten, Koln, Germany, Federal Republic of
Piejko, Karl-Erwin, Bergisch Gladbach, Germany, Federal Republic of
Joentgen, Winfried, Koln, Germany, Federal Republic of
Kasbauer, Josef, Wermelskirchen, Germany, Federal Republic of
Alig, Bernd, Konigswinter, Germany, Federal Republic of
Struver, Werner, Leverkusen, Germany, Federal Republic of
PA Bayer Aktiengesellschaft, Leverkusen, Germany, Federal Republic of
(non-U.S. corporation)

PI US 5773630 19980630

AI US 1996-595982 19960206 (8)

PRAI DE 1995-19504623 19950213

DT Utility

EXNAM Primary Examiner: Haley, Jacqueline

LREP Sprung Horn Kramer & Woods

CLMN Number of Claims: 11

ECL Exemplary Claim: 1

DRWN No Drawings

LN.CNT 803

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB N-Substituted cyclic imides are obtained by reacting a cyclic acid
anhydride with an amine in the presence of a solvent and an acid
catalyst at 80.degree. to 200.degree. C. and with removal of the water
formed, it being particularly advantageous to carry out this reaction

in

the presence of a stabilizer and an inert, dipolar aprotic cosolvent,
optionally to add an inert organic solvent of low or zero polarity to
the reaction mixture present after the reaction, to add a non-aqueous
base in an amount of 0.5 to 50% by weight, based on the cyclic

anhydride

of the formula (II) used, and to separate off the precipitate formed to
give a filtrate containing the N-substituted cyclic imide.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

=> d bib abs 2

L81 ANSWER 2 OF 3 USPATFULL

AN 95:90592 USPATFULL

TI Solid compositions of polyglycidyl compounds having a molecular weight of less than 1500

IN Cotting, Jacques-Alain, Bonnefontaine, Switzerland
Gottis, Philippe-Guilhaume, Mulhouse, France

PA Ciba-Geigy Corporation, Ardsley, NY, United States (U.S. corporation)

PI US 5457168 19951010

AI US 1995-384793 19950213 (8)

RLI Continuation of Ser. No. US 1994-169942, filed on 2 Feb 1994, now abandoned which is a division of Ser. No. US 1992-952123, filed on 28 Sep 1992, now patented, Pat. No. US 5294683

PRAI CH 1991-2921 19911003

DT Utility

EXNAM Primary Examiner: Marquis, Melvyn I.; Assistant Examiner: Gulakowski, Randy

LREP Teoli, Jr., William A.

CLMN Number of Claims: 3

ECL Exemplary Claim: 1

DRWN No Drawings

LN.CNT 760

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB There is disclosed a solid composition of polyglycidyl compounds having a molecular weight of less than 1500, which composition consists of one or more than one solid polyglycidyl compound and altogether not less than 5% by weight of one or of a mixture of more than one polyglycidyl compound, which compound or mixture is normally in liquid form, said amount being based on the total amount of all polyglycidyl compounds in the composition, which composition contains the said solid polyglycidyl compounds or at least part of the said solid polyglycidyl compounds in form of one or a mixture of more than one solid mixed phase, which

solid

mixed phase or mixture of more than one solid mixed phase essentially comprises the total amount of the polyglycidyl compounds which are normally in liquid form as additional component or components. Preferably the compositions are solid solutions of a solid polyglycidyl compound, typically diglycidyl terephthalate, and a further

polyglycidyl

compound which is normally in liquid form, for example triglycidyl trimellitate or triglycidyl trimesate. The compositions are suitable hardeners for powder coating compositions based on carboxyl-terminated polyesters.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

=> d bib abs 3

L81 ANSWER 3 OF 3 USPATFULL

AN 94:22318 USPATFULL

TI Solid compositions of polyglycidyl compounds having a molecular weight of less than 1500

IN Cotting, Jacques-Alain, Bonnefontaine, Switzerland
Gottis, Philippe-Guilhaume, Mulhouse, France

PA Ciba-Geigy Corporation, Ardsley, NY, United States (U.S. corporation)

PI US 5294683 19940315

AI US 1992-952123 19920928 (7)

PRAI CH 1991-2921 19911003

DT Utility

EXNAM Primary Examiner: Sellers, Robert E.; Assistant Examiner: Gulakowski, Randy

LREP Teoli, Jr., William A.

CLMN Number of Claims: 13

ECL Exemplary Claim: 1

DRWN No Drawings

LN.CNT 776

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB There is disclosed a solid composition of polyglycidyl compounds having a molecular weight of less than 1500, which composition consists of one or more than one solid polyglycidyl compound and altogether not less than 5% by weight of one or of a mixture of more than one polyglycidyl compound, which compound or mixture is normally in liquid form, said amount being based on the total amount of all polyglycidyl compounds in the composition, which composition contains the said solid polyglycidyl compounds or at least part of the said solid polyglycidyl compounds in form of one or a mixture of more than one solid mixed phase, which

solid

mixed phase or mixture of more than one solid mixed phase essentially comprises the total amount of the polyglycidyl compounds which are normally in liquid form as additional component or components. Preferably the compositions are solid solutions of a solid polyglycidyl compound, typically diglycidyl terephthalate, and a further

polyglycidyl

compound which is normally in liquid form, for example triglycidyl trimellitate or triglycidyl trimesate. The compositions are suitable hardeners for powder coating compositions based on carboxyl-terminated polyesters.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

=> d his

(FILE 'HOME' ENTERED AT 13:47:59 ON 31 OCT 2000)

FILE 'HCAPLUS' ENTERED AT 13:48:10 ON 31 OCT 2000

L1 221 S BRUNNER M?/AU
L2 45 S BOTTCHER A?/AU
L3 49 S BREITSCHIEDL B?/AU
L4 52 S HALBRITTER K?/AU
L5 104 S HENKELMANN J?/AU
L6 16 S THIL L?/AU
L7 70 S PINKOS R?/AU
L8 1 S L1 AND L2 AND L3 AND L4 AND L5 AND L6 AND L7
SELECT RN L8 1

FILE 'REGISTRY' ENTERED AT 13:49:02 ON 31 OCT 2000

L9 35 S E1-35

FILE 'HCAPLUS' ENTERED AT 13:49:09 ON 31 OCT 2000

L10 1 S L8 AND L9

FILE 'REGISTRY' ENTERED AT 13:52:12 ON 31 OCT 2000

L11 STR
L12 50 S L11
L13 STR L11
L14 50 S L13
L15 STR L13
L16 50 S L15

FILE 'LREGISTRY' ENTERED AT 13:55:39 ON 31 OCT 2000

L17 285 S PHTHALIC ACID
L18 1 S PHTHALIC ACID/CN
L19 1 S ISOPHTHALIC ACID/CN
L20 1 S TEREPHTHALIC ACID/CN
L21 1 S TRIMELLITIC ACID/CN
L22 1 S TRIMESIC ACID/CN
L23 1 S PYROMELLITIC ACID/CN

FILE 'REGISTRY' ENTERED AT 13:57:17 ON 31 OCT 2000

L24 STR
L25 STR L24
L26 STR L24
L27 50 S L24 OR L25 OR L26
L28 95973 S L24 OR L25 OR L26 FUL
L29 STR L24
L30 STR L25
L31 STR L26
L32 STR L31
L33 STR L25
L34 STR L32
L35 50 S L29-L34 SSS SAM SUB=L28
L36 STR L29
L37 STR L30
L38 STR L31
L39 STR L32
L40 STR L33

Searched by John Dantzman 703-308-4488

L41 STR L34
L42 50 S L36-L41 SSS SAM SUB=L28
L43 STR L36
L44 STR L37
L45 STR L38
L46 STR L39
L47 STR L40
L48 STR L41
L49 63706 S L43-L48 SSS FUL SUB=L28
SAV TEMP L49 KHARE581/A

FILE 'CAPLUS' ENTERED AT 14:22:05 ON 31 OCT 2000

FILE 'HCAPLUS' ENTERED AT 14:22:11 ON 31 OCT 2000

L50 145711 S L49
L51 612 S L50(L)HYDROGENAT?
L52 96 S L51 AND (FE OR CO OR RU OR RH OR OS OR IR)
L53 52 S L51 AND (IRON OR COBALT? OR RUTHEN?)
L54 24 S L51 AND (RHODIUM OR OSMIUM OR IRIDIUM)
L55 15 S L51 AND GROUP VIII
L56 121 S L52-L55
L57 1 S L56 AND (MACROPORE OR (MACRO OR LARGE) (4A)PORE)
L58 1 S L56 AND (MACROPORE OR (MACRO OR LARGE) (4A) (PORE OR POROUS))
L59 8 S L56 AND GROUP VIII (9A)HYDROGENAT? (3A)CATALY?
L60 21 S L56 AND (RHODIUM OR OSMIUM OR
IRIDIUM) (9A)HYDROGENAT? (3A)CATA
L61 39 S L56 AND (IRON OR COBALT? OR RUTHEN?
) (9A)HYDROGENAT? (3A)CATAL
L62 17 S L56 AND (FE OR CO OR RU OR RH OR OS OR
IR) (9A)HYDROGENAT? (3A)
L63 61 S L59-L62
L64 1 S L63 AND L58

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FILE 'HCAPLUS' ENTERED AT 14:34:25 ON 31 OCT 2000

SET SMARTSELECT ON
L65 SEL L63 1- RN : 693 TERMS
SET SMARTSELECT OFF

FILE 'REGISTRY' ENTERED AT 14:34:30 ON 31 OCT 2000

L66 692 S L65
L67 58 S L66 AND L28

FILE 'HCAPLUS' ENTERED AT 14:35:18 ON 31 OCT 2000

L68 59 S L63 AND L67
L69 1 S L58 AND L67
L70 58 S L68 NOT L69
L71 2 S L56 AND (MACRO?)
L72 1 S L56 AND LARGE
L73 3 S L71 OR L72

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L74 62133 S BENZENEPOLYCARBOXYLIC? OR PHTHALIC OR ISOPHTHALIC OR
TEREPHHA
L75 19938 S TRIMELLITIC OR TRIMESIC OR HEMIMELLITIC OR PYROMELLITIC
L76 514 S (L74 OR L74) (9A)HYDROGENAT?

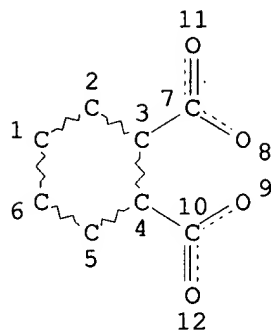
Searched by John Dantzman 703-308-4488

L77 185 S L76 AND (MACRO? OR LARGE)
L78 2 S L76 AND (MACRO? OR LARGE) (1A) (PORE OR POROUS)
L79 1 S L76 AND MACROPOROUS?
L80 3 S L78 OR L79
L81 3 DUP REMOV L80 (0 DUPLICATES REMOVED)

=> d que 149

L24

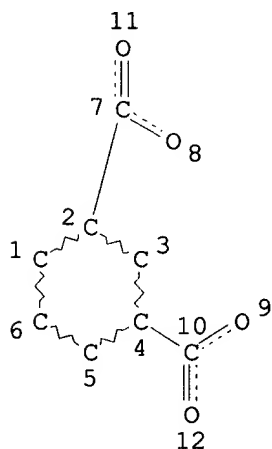
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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
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NUMBER OF NODES IS 12

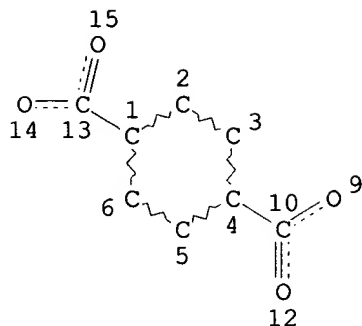
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L25 STR



NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC I
NUMBER OF NODES IS 12

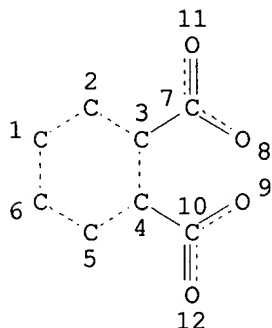
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L26 STR



NODE ATTRIBUTES:
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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
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NUMBER OF NODES IS 12

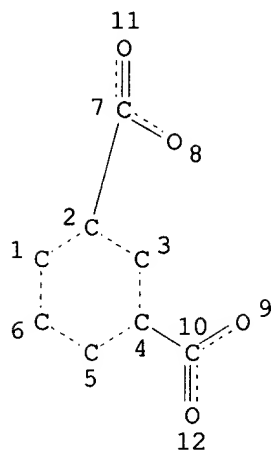
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L43 STR



NODE ATTRIBUTES:
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CONNECT IS E2 RC AT 2
CONNECT IS E2 RC AT 5
CONNECT IS E2 RC AT 6
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

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NUMBER OF NODES IS 12

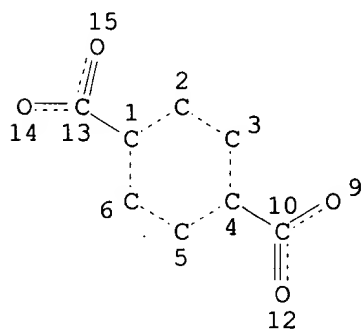
STEREO ATTRIBUTES: NONE
L44 STR



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 CONNECT IS E2 RC AT 3
 CONNECT IS E2 RC AT 5
 CONNECT IS E2 RC AT 6
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
 RSPEC I
 NUMBER OF NODES IS 12

STEREO ATTRIBUTES: NONE
 L45 STR



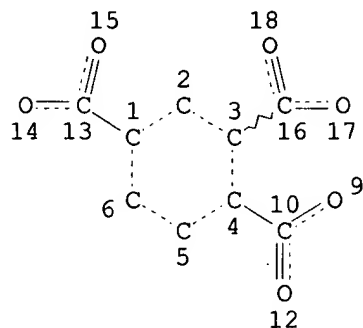
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 CONNECT IS E2 RC AT 6
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 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
 RSPEC I

NUMBER OF NODES IS 12

STEREO ATTRIBUTES: NONE

L46 STR



NODE ATTRIBUTES:

CONNECT IS E2 RC AT 2

CONNECT IS E2 RC AT 5

CONNECT IS E2 RC AT 6

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

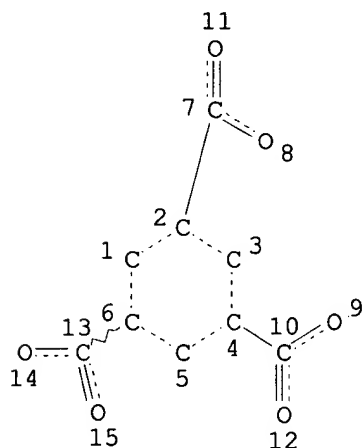
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RSPEC I

NUMBER OF NODES IS 15

STEREO ATTRIBUTES: NONE

L47 STR



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CONNECT IS E2 RC AT 3

CONNECT IS E2 RC AT 5

DEFAULT MLEVEL IS ATOM

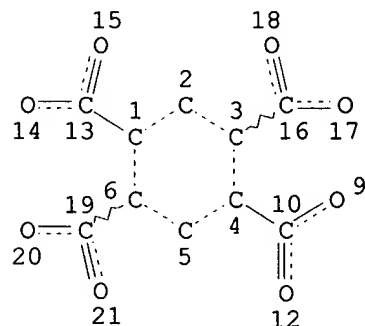
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GRAPH ATTRIBUTES:

Searched by John Dantzman 703-308-4488

RSPEC I
NUMBER OF NODES IS 15

STEREO ATTRIBUTES: NONE
L48 STR



NODE ATTRIBUTES:
CONNECT IS E2 RC AT 2
CONNECT IS E2 RC AT 5
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC I
NUMBER OF NODES IS 18

STEREO ATTRIBUTES: NONE
L49 63706 SEA FILE=REGISTRY SUB=L28 SSS FUL (L43 OR L44 OR L45 OR L46
OR
L47 OR L48)

=> d bib abs hitstr 169

L69 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2000 ACS

AN 1999:409576 HCAPLUS

DN 131:45534

TI Method and macroporous catalysts for the hydrogenation of dialkyl benzenedicarboxylates into dialkyl cyclohexanedicarboxylate plasticizers

IN Brunner, Melanie; Boettcher, Arnd; Breitscheidel, Boris; Halbritter, Klaus; Henkelmann, Jochem; Thil, Lucien; Pinkos, Rolf

PA BASF A.-G., Germany

SO Ger. Offen., 8 pp.

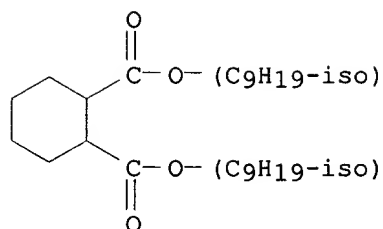
CODEN: GWXXBX

DT Patent

LA German

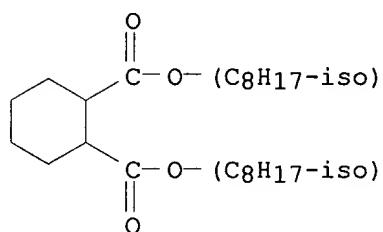
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19756913	A1	19990624	DE 1997-19756913	19971219
	WO 9932427	A1	19990701	WO 1998-EP8346	19981218
	W: AU, BR, CA, CN, ID, IN, JP, KR, MX, SG, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	AU 9926133	A1	19990712	AU 1999-26133	19981218
	EP 1042273	A1	20001011	EP 1998-966901	19981218
	R: BE, DE, ES, FR, GB, IT				
PRAI	DE 1997-19756913		19971219		
	DE 1998-19832088		19980716		
	WO 1998-EP8346		19981218		
AB	Dialkyl cyclohexanedicarboxylates (e.g., diisooctyl 1,2-cyclohexanedicarboxylate), useful as plasticizers, are prepd. in high yield and selectivity with reduced byproduct formation by the hydrogenation of the corresponding dialkyl benzenedicarboxylates (e.g., diisooctyl phthalate) in the presence of a catalyst comprising Ru alone or in addn. to .gtoreq.1 of Group IB, VIIB, or VIII metal(s) on a macroporous support (e.g., alumina) having an av. pore diam. of .gtoreq.50 nm, a BET surface area of .ltoreq.30 m2/g, a catalytically active metal(s) content of 0.01-30%, and a ratio of the surface area of the catalytically active metal(s) to that of the carrier of <0.05. The catalysts have 10-50% of their pore vol. due to macropores having a diam. of 50-10,000 nm and 50-90% of their pore vol. due to mesopores with a diam. of 2-50 nm, the sum total of both types of pore areas being 100%.				
IT	166412-78-8P 227472-91-5P 227472-92-6P				
	RL: MOA (Modifier or additive use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)				
	(method and macroporous catalysts for the hydrogenation of dialkyl benzenedicarboxylates into dialkyl cyclohexanedicarboxylate plasticizers)				
RN	166412-78-8 HCAPLUS				
CN	1,2-Cyclohexanedicarboxylic acid, diisononyl ester (9CI) (CA INDEX NAME)				



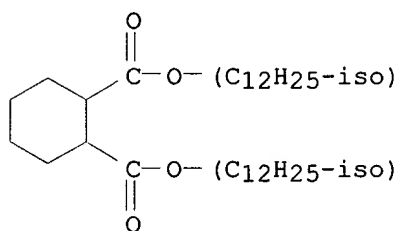
RN 227472-91-5 HCAPLUS

CN 1,2-Cyclohexanedicarboxylic acid, diisooctyl ester (9CI) (CA INDEX NAME)



RN 227472-92-6 HCAPLUS

CN 1,2-Cyclohexanedicarboxylic acid, diisododecyl ester (9CI) (CA INDEX NAME)



IT 100-21-0D, Terephthalic acid, dialkyl esters 117-81-7,

Diisooctyl phthalate 120-61-6 27554-06-9, Diisododecyl

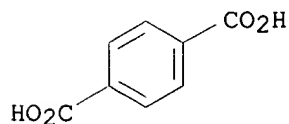
phthalate 28553-12-0, Diisononyl phthalate

RL: RCT (Reactant)

(method and macroporous catalysts for the **hydrogenation** of
dialkyl benzenedicarboxylates into dialkyl cyclohexanedicarboxylate
plasticizers)

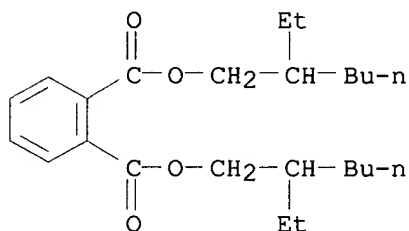
RN 100-21-0 HCAPLUS

CN 1,4-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)



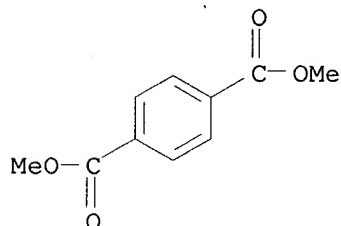
RN 117-81-7 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester (9CI) (CA INDEX NAME)



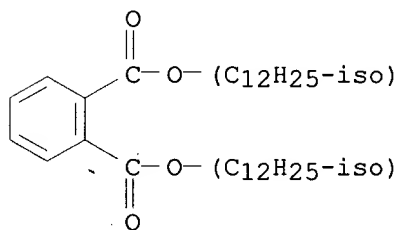
RN 120-61-6 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, dimethyl ester (9CI) (CA INDEX NAME)



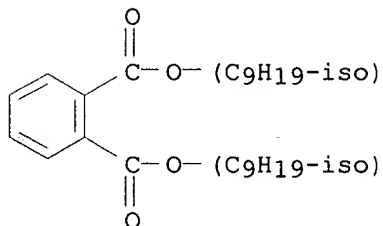
RN 27554-06-9 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, diisododecyl ester (9CI) (CA INDEX NAME)



RN 28553-12-0 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, diisononyl ester (9CI) (CA INDEX NAME)



KHARE

09/581843

Page 4

Searched by John Dantzman 703-308-4488

=> d bib abs hitstr

L70 ANSWER 1 OF 58 HCAPLUS COPYRIGHT 2000 ACS

AN 2000:161240 HCAPLUS

DN 132:207479

TI Catalytic synthesis of aldehydes by direct hydrogenation of carboxylic acids

IN Yamamoto, Akio; Nagayama, Kazuhiro

PA Japan Science and Technology Corporation, Japan

SO PCT Int. Appl., 22 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000012457	A1	20000309	WO 1999-JP4633	19990827
	W: JP, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				

PRAI JP 1998-241651 19980827

OS CASREACT 132:207479; MARPAT 132:207479

AB Described is a process which makes it possible to prep. aldehydes under mild reaction conditions with a high efficiency through the redn. of carboxylic acids with mol. hydrogen. Specifically, described is a process

of reducing an org. carboxylic acid with mol. hydrogen in the presence of a catalyst into an aldehyde corresponding to the acid, characterized by conducting the redn. in the presence of a dehydrating agent such as a carboxylic anhydride. Thus, n-C7H15CO2H 2, pivalic anhydride 6,

Pd(PPh3)4

0.02 mmol, and 5 cm3 THF were stirred under 3.0 MPa H pressure at 80.degree. for 24 h to give 98% n-octanal and 23% pivalaldehyde.

IT 88-99-3, 1,2-Benzenedicarboxylic acid, reactions 100-21-0

, 1,4-Benzenedicarboxylic acid, reactions 121-91-5,

1,3-Benzenedicarboxylic acid, reactions 554-95-0,

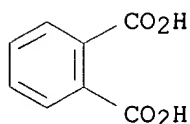
1,3,5-Benzenetricarboxylic acid

RL: RCT (Reactant)

(catalytic synthesis of aldehydes by direct hydrogenation of carboxylic acids)

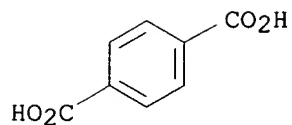
RN 88-99-3 HCAPLUS

CN 1,2-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)



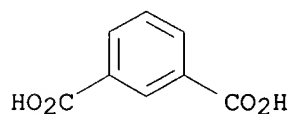
RN 100-21-0 HCAPLUS

CN 1,4-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)



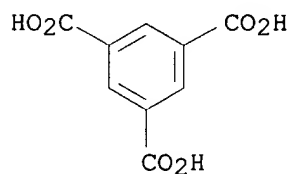
RN 121-91-5 HCAPLUS

CN 1,3-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)



RN 554-95-0 HCAPLUS

CN 1,3,5-Benzenetricarboxylic acid (8CI, 9CI) (CA INDEX NAME)



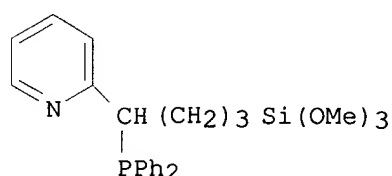
RE.CNT 5

RE

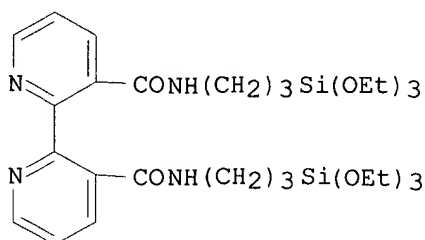
- (1) Mitsubishi Kasei Kogyo K K; EP 439115 A2 HCAPLUS
- (2) Mitsubishi Kasei Kogyo K K; US 5239108 A
- (3) Mitsubishi Kasei Kogyo K K; JP 04210936 A 1992
- (4) Mitsui Petrochemical Ind Ltd; JP 940599 A 1997
- (5) Nagayama; Chem Lett 1998, 11, P1143 HCAPLUS

=> d bib abs hitstr 2

L70 ANSWER 2 OF 58 HCAPLUS COPYRIGHT 2000 ACS
AN 2000:62985 HCAPLUS
DN 132:207927
TI Hydrogenation of Arenes under Mild Conditions Using **Rhodium**
Pyridylphosphine and Bipyridyl Complexes Tethered to a Silica-Supported
Palladium Heterogeneous Catalyst
AU Yang, Hong; Gao, Hanrong; Angelici, Robert J.
CS Ames Laboratory and Department of Chemistry, Iowa State University, Ames,
IA, 50011, USA
SO Organometallics (2000), 19(4), 622-629
CODEN: ORGND7; ISSN: 0276-7333
PB American Chemical Society
DT Journal
LA English
GI



I



II

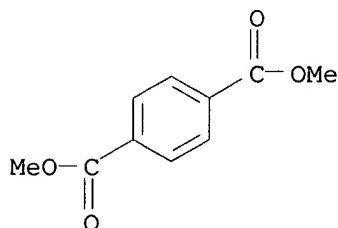
AB The **rhodium** complexes $[\text{Rh}(\text{COD})(\text{I})]\text{BF}_4$ (**Rh** (N-P)) and $[\text{Rh}(\text{COD})(\text{II})]\text{BF}_4$ (**Rh** (N-N)), contg. the new pyridylphosphine and bipyridyl ligands (I and II) with alkoxyasilane groups, were tethered on the silica-supported palladium heterogeneous catalyst Pd-SiO₂ to give the TCSM (tethered complex on supported metal) catalysts **Rh** (N-P)/Pd-SiO₂ and **Rh** (N-N)/Pd-SiO₂. Under the mild conditions of 70.degree. and 4 atm of H₂, the two TCSM catalysts are very active for the hydrogenation of arenes (PhCO₂Me, PhOH, toluene, PhOCH₃, PhCO₂Et, 4-CH₃C₆H₄CO₂Et, di-Me terephthalate) to cyclohexanes;

the activities are higher than those of the sep. homogeneous **Rh** (N-P) and **Rh** (N-N) complex catalysts, the silica-supported palladium catalyst Pd-SiO₂, or the **rhodium** complex catalysts tethered on just SiO₂. The catalysts are easily sepd. from the reaction mixts. and can be recycled several times without losing activity. Of the two TCSM catalysts, the higher activity for the hydrogenation of anisole to Me cyclohexyl ether was obsd. for **Rh** (N-N)/Pd-SiO₂, which gives a TOF value of 3060 mol of substrate converted/(mol of **Rh**) h) and a TO value of 14 500 mol of substrate converted/(mol of **Rh**) in 6 h. Reactions of acetophenone lead to hydrogenation of the arene ring,

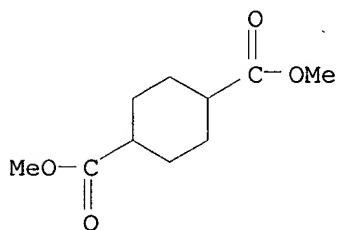
the carbonyl group, or both, depending on the catalyst (**Rh**)

Searched by John Dantzman 703-308-4488

(N-P)/Pd-SiO₂ or Rh(N-N)/Pd-SiO₂) and the solvent (heptane or ethanol).
IT 120-61-6, Dimethyl terephthalate
RL: RCT (Reactant)
(hydrogenation of arenes under mild conditions using rhodium pyridylphosphine and bipyridyl complexes tethered to a silica-supported palladium heterogeneous catalyst)
RN 120-61-6 HCAPLUS
CN 1,4-Benzenedicarboxylic acid, dimethyl ester (9CI) (CA INDEX NAME)



IT 94-60-0P, Dimethyl cyclohexane-1,4-dicarboxylate
RL: SPN (Synthetic preparation); PREP (Preparation)
(hydrogenation of arenes under mild conditions using rhodium pyridylphosphine and bipyridyl complexes tethered to a silica-supported palladium heterogeneous catalyst)
RN 94-60-0 HCAPLUS
CN 1,4-Cyclohexanedicarboxylic acid, dimethyl ester (6CI, 7CI, 8CI, 9CI)
(CA INDEX NAME)



RE.CNT 88
RE

- (1) Ahmed, I; J Organomet Chem 1993, V452, P23 HCAPLUS
 - (2) Alvarez, M; J Chem Soc, Dalton Trans 1994, P2755 HCAPLUS
 - (3) Amer, I; J Mol Catal 1986, V34, P221 HCAPLUS
 - (4) Anderson, M; Inorg Chem 1988, V27, P1649 HCAPLUS
 - (5) Ankianiec, B; J Am Chem Soc 1991, V113, P4710 HCAPLUS
- ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d bib abs hitstr 3

L70 ANSWER 3 OF 58 HCAPLUS COPYRIGHT 2000 ACS

AN 2000:62832 HCAPLUS

DN 132:79039

TI Method for selectively hydrogenating conjugated diene block copolymers by using dicyclopentadienyltitanium compounds and cocatalysts

IN Yin, Shaoming; Li, Wangming; Liang, Hongwen; Hu, Xuewu; Luo, Qinhui; Peng, Xiaohan

PA Yueyang Petrochemical General Plant, Baling Petrochemical Corp., Peop. Rep. China

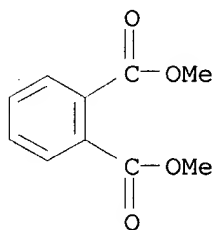
SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 8 pp.
CODEN: CNXXEV

DT Patent

LA Chinese

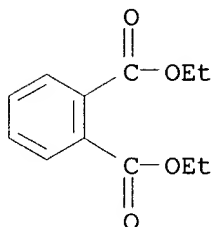
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CN 1166498	A	19971203	CN 1997-108079	19970523
OS	MARPAT 132:79039				
AB	The method comprises polymg. a C4-8 diene (e.g., butadiene) with comonomers (e.g., styrene) in the presence of an org. alkali metal initiator (e.g., n-butyllithium) in cyclohexane to form a block copolymer, and selectively hydrogenating the polymer by using dicyclopentadienyltitanium as a catalyst and arom. compd. having ester or hydroxy groups as a cocatalyst (e.g., di-Me phthalate) at 45-95.degree. and 0.4-2.2 MPa for 1-2 h. The hydrogenated diene block copolymers have hydrogenation degree >95%.				
IT	131-11-3, Dimethyl phthalate RL: CAT (Catalyst use); USES (Uses) (cocatalyst; method for selectively hydrogenating conjugated dienes polymers by using dicyclopentadienyltitaniums and cocatalysts)				
RN	131-11-3 HCAPLUS				
CN	1,2-Benzenedicarboxylic acid, dimethyl ester (9CI) (CA INDEX NAME)				

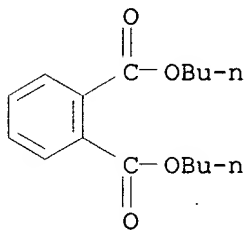


IT 84-66-2, Diethyl phthalate 84-74-2, Dibutyl phthalate
117-84-0, Dioctyl phthalate 120-61-6, Dimethyl
terephthalate 635-10-9, Tetramethyl pyromellitate
1459-93-4, Dimethyl isophthalate 2432-90-8, Didodecyl
phthalate 2672-57-3, Trimethyl 1,2,3-benzenetricarboxylate
RL: CAT (Catalyst use); USES (Uses)
(cocatalyst; selectively **hydrogenation** of conjugated diene
Searched by John Dantzman 703-308-4488

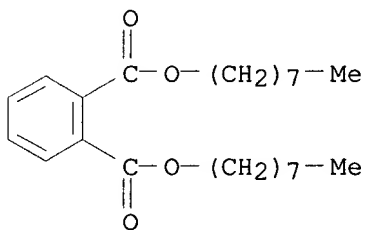
block co polymers by using dicyclopentadienyltitaniums and
cocatalysts)
RN 84-66-2 HCAPLUS
CN 1,2-Benzenedicarboxylic acid, diethyl ester (9CI) (CA INDEX NAME)



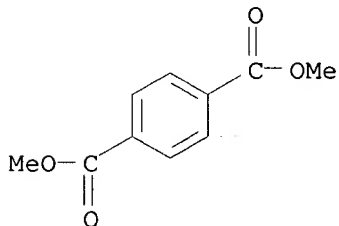
RN 84-74-2 HCAPLUS
CN 1,2-Benzenedicarboxylic acid, dibutyl ester (9CI) (CA INDEX NAME)



RN 117-84-0 HCAPLUS
CN 1,2-Benzenedicarboxylic acid, dioctyl ester (9CI) (CA INDEX NAME)

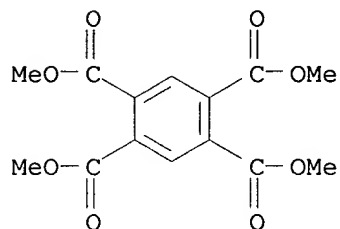


RN 120-61-6 HCAPLUS
CN 1,4-Benzenedicarboxylic acid, dimethyl ester (9CI) (CA INDEX NAME)



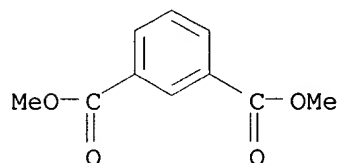
RN 635-10-9 HCAPLUS

CN 1,2,4,5-Benzenetetracarboxylic acid, tetramethyl ester (7CI, 8CI, 9CI)
(CA INDEX NAME)



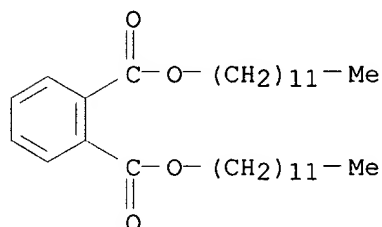
RN 1459-93-4 HCAPLUS

CN 1,3-Benzenedicarboxylic acid, dimethyl ester (9CI) (CA INDEX NAME)



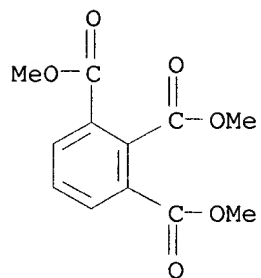
RN 2432-90-8 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, didodecyl ester (9CI) (CA INDEX NAME)



RN 2672-57-3 HCAPLUS

CN 1,2,3-Benzenetricarboxylic acid, trimethyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



=> d bib abs hitstr 4

L70 ANSWER 4 OF 58 HCAPLUS COPYRIGHT 2000 ACS

AN 2000:23669 HCAPLUS

DN 132:80032

TI Manufacturing method for 1,4-cyclohexanedimethanol

IN Hara, Yoshinori

PA Mitsubishi Chemical Industries Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.

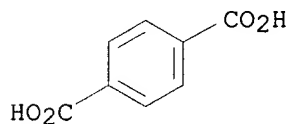
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000007596	A2	20000111	JP 1998-174385	19980622
AB	Terephthalic acid (I) is hydrogenated in liqs. contg. at least Ru and Sn catalysts and solvents to prep. 1,4-cyclohexanedimethanol (II). Thus, I 10.1, water 40, and a catalyst (Ru 6, Pt 3.5, and Sn 5% on carbon) 2 g were mixed and hydrogenated at 230.degree. for 4 h to prep. 28.3% II.				
IT	100-21-0 , Terephthalic acid, reactions RL: RCT (Reactant) (catalysts contg. ruthenium and platinum and tin on carbon for hydrogenation of terephthalic acid to cyclohexanedimethanol)				
RN	100-21-0 HCAPLUS				
CN	1,4-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)				



=> d bib abs hitstr 5

L70 ANSWER 5 OF 58 HCAPLUS COPYRIGHT 2000 ACS
AN 1999:748353 HCAPLUS
DN 132:12597
TI Soluble polyester-supported chiral phosphines
IN Chan, Albert Sun-Chi; Fan, Qing-Hua
PA The Hong Kong Polytechnic University, Hong Kong
SO U.S., 15 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5990318	A	19991123	US 1998-72590	19980306
OS	MARPAT 132:12597				
AB	Novel sol. polyester-supported chiral phosphines have been prepd. and have				

been used in the prepn. of **rhodium** and **ruthenium** catalysts. Such polymer-supported catalysts show high catalytic activities and enantioselectivities. In the case of **Ru**(BINAP) catalyst supported on sol. polyester, the resulting catalysts were found to be more active than those of the corresponding homogeneous **Ru**(BINAP) **catalysts** in the asym. **hydrogenation** of 2-arylpropenoic acids. These sol. polyester-supported catalysts can be easily sepd. from the reaction mixt. and then be reused without loss of activity and selectivity. A typical polyester was manufd. by polymn. of 2S,4S-pentanediol 9.76, terephthaloyl chloride 9.95, and (S)-5,5'-diamino-BINAP in C₅H₅N-1,2-dichloroethane.

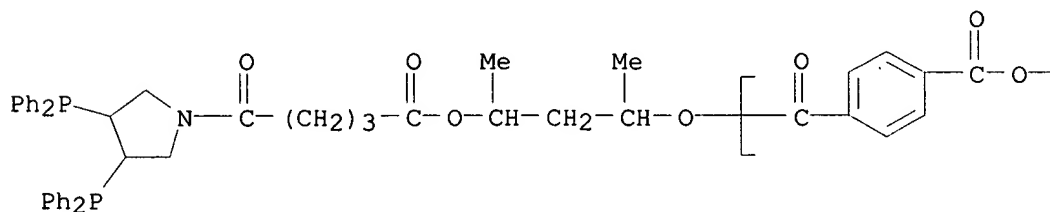
IT 251090-20-7P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation) (catalyst precursor; sol. polyester-supported chiral phosphines for catalysts for asym. **hydrogenation** of arylpropenoic acids)

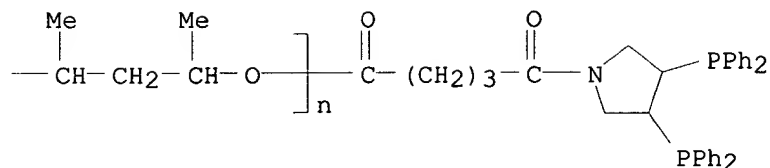
RN 251090-20-7 HCAPLUS

CN Poly[oxy[(1S,3S)-1,3-dimethyl-1,3-propanediyl]oxycarbonyl-1,4-phenylenecarbonyl], .alpha.-[5-[(3R,4R)-3,4-bis(diphenylphosphinyl)-1-pyrrolidinyl]-1,5-dioxopentyl]-.omega.-[(1S,3S)-3-[[5-[(3R,4R)-3,4-bis(diphenylphosphinyl)-1-pyrrolidinyl]-1,5-dioxopentyl]oxy]-1,3-dimethylpropoxy]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



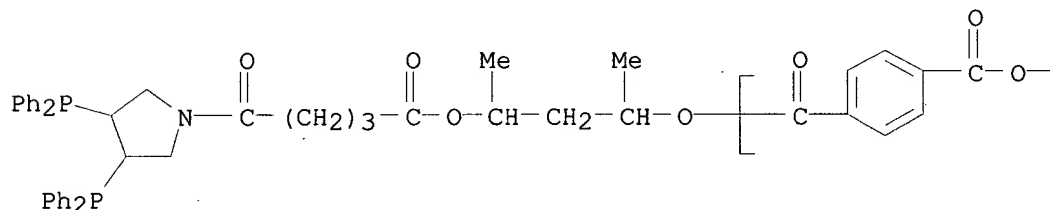
IT 251090-20-7DP, reaction products with silver tetrafluoroborate and
bis(chlorocyclooctadienerhodium)
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation);
USES (Uses)

(sol. polyester-supported chiral phosphines for catalysts for asym. hydrogenation of arylpropenoic acids)

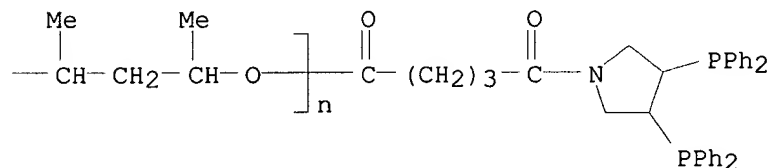
RN 251090-20-7 HCAPLUS

Poly[oxy[(1S,3S)-1,3-dimethyl-1,3-propanediyl]oxycarbonyl-1,4-phenylenecarbonyl], .alpha.-[5-[(3R,4R)-3,4-bis(diphenylphosphinyl)-1-pyrrolidinyl]-1,5-dioxopentyl]-.omega.-[(1S,3S)-3-[[5-[(3R,4R)-3,4-bis(diphenylphosphinyl)-1-pyrrolidinyl]-1,5-dioxopentyl]oxy]-1,3-dimethylpropoxy]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



RE.CNT 14

RE

- (2) Bolm; Angew Chem Int Ed Engl 1997, V36(7), P741 HCAPLUS
(3) Han; J Am Chem Soc 1996, V118(32), P7632 HCAPLUS
(4) Holz; Synthesis 1997, P983 HCAPLUS
(6) Kitamura; J Org Chem 1992, V57, P4053 HCAPLUS
(8) Malmstroem; J Mol Catal A: Chem 1997, V116(1-2), P237 HCAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

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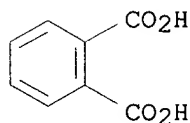
09/581843

Page 16

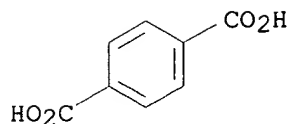
Searched by John Dantzman 703-308-4488

=> d bib abs hitstr 6

L70 ANSWER 6 OF 58 HCAPLUS COPYRIGHT 2000 ACS
AN 1999:731429 HCAPLUS
DN 132:109692
TI Synthesis of alcohols and diols by **hydrogenation** of carboxylic acids and esters over **Ru-Sn-Al2O3 catalysts**
AU Toba, M.; Tanaka, S.-i.; Niwa, S.-i.; Mizukami, F.; Koppany, Z.; Guczi, L.; Cheah, K.-Y.; Tang, T.-S.
CS National Institute of Materials and Chemical Research, Tsukuba, Japan
SO Appl. Catal., A (1999), 189(2), 243-250
CODEN: ACAGE4; ISSN: 0926-860X
PB Elsevier Science B.V.
DT Journal
LA English
AB **Ru-Sn-Al2O3 catalysts** were prepd. by sol-gel, impregnation, and combination methods and the relationship between catalyst properties and reaction profiles in the hydrogenation of dicarboxylic acids and satd. fatty acids were examd. The surface Sn contents of catalysts characterized by XPS (XPS) depended on the prepn. method in spite of almost the same bulk **Ru** and Sn compns. measured by X-ray fluorescence analyses. Temp. programmed redn. (TPR) and **CO** adsorption of the catalysts also depended on prepn. methods. The prepn. method, Sn/**Ru** ratio, reaction temp., and substrate structure have effects on the yield of diol. **Ru-Sn-Al2O3 catalysts** gave fatty alcs. with good yield in the hydrogenation of the corresponding satd. fatty acids. The conversion of the acids increased with increasing carbon no.
IT **88-99-3**, Phthalic acid, reactions **100-21-0**, Terephthalic acid, reactions **120-61-6**, Dimethyl terephthalate **121-91-5**, Isophthalic acid, reactions **1679-64-7**, Monomethyl terephthalate
RL: RCT (Reactant)
(**hydrogenation over Ru-Sn-Al2O3 catalysts**)
RN **88-99-3** HCAPLUS
CN 1,2-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)

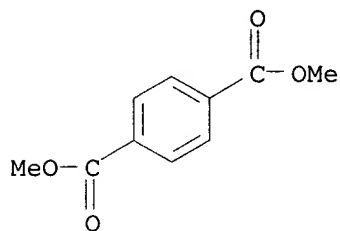


RN **100-21-0** HCAPLUS
CN 1,4-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)



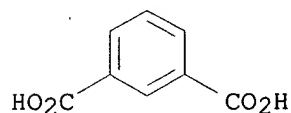
RN 120-61-6 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, dimethyl ester (9CI) (CA INDEX NAME)



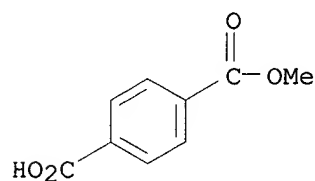
RN 121-91-5 HCAPLUS

CN 1,3-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)



RN 1679-64-7 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, monomethyl ester (9CI) (CA INDEX NAME)



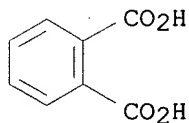
RE.CNT 19

RE

- (1) Baer, K; DE 2917018 1979 HCAPLUS
 - (3) Buchold, H; Chem Eng (NY) 1983, V90, P42 HCAPLUS
 - (5) Cheah, K; J Am Oil Chem Soc 1992, V69, P410 HCAPLUS
 - (9) Ishii, K; Catal Lett 1998, V52, P49 HCAPLUS
 - (10) Ishii, K; J Am Oil Chem Soc 1996, V73, P465 HCAPLUS
- ALL CITATIONS AVAILABLE IN THE RE FORMAT

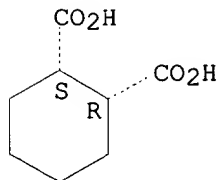
=> d bib abs hitstr 7

L70 ANSWER 7 OF 58 HCAPLUS COPYRIGHT 2000 ACS
AN 1999:631704 HCAPLUS
DN 132:224056
TI Selective synthesis of lactones over Ru/Sn/Al₂O₃ catalysts prepared by complexing agent-assisted sol-gel method
AU Toba, M.; Niwa, S.; Mizukami, F.; Koppany, Zs.; Guczi, L.
CS Department of Surface Chemistry, National Institute of Materials and Chemical Research, Tsukuba, 305-8565, Japan
SO Stud. Surf. Sci. Catal. (1999), 125(Porous Materials in Environmentally Friendly Processes), 547-554
CODEN: SSCTDM; ISSN: 0167-2991
PB Elsevier Science B.V.
DT Journal
LA English
AB Ru/Sn/Al₂O₃ catalysts were prepd. by a complexing agent-assisted sol-gel or impregnation method. The effect of the prepn. conditions on catalyst properties and selectivity to lactones in the hydrogenation of dicarboxylic acids was examd. The surface Sn content of the catalysts was characterized by XPS and depended on the prepn. method. TPR and CO adsorption of the catalysts also was dependent on prepn. method.
IT 88-99-3, Phthalic acid, reactions 610-09-3, cis-1,2-Cyclohexanedicarboxylic acid
RL: RCT (Reactant)
(selective **hydrogenation** of dicarboxylic acids and anhydrides to lactones over Ru/Sn/Al₂O₃ catalysts)
RN 88-99-3 HCAPLUS
CN 1,2-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)



RN 610-09-3 HCAPLUS
CN 1,2-Cyclohexanedicarboxylic acid, (1R,2S)-rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



RE.CNT 5

Searched by John Dantzman 703-308-4488

RE

- (1) Cheah, K; J Am Oil Chem 1992, V69, P410 HCAPLUS
- (2) Ishii, K; Catal Lett 1995, V30, P297
- (3) Ishii, K; Catal Lett 1998, V52, P49 HCAPLUS
- (4) Niwa, S; Catalysis of Organic Reactions 1995, P451 HCAPLUS
- (5) Tang, T; J Am Oil Chem 1994, V71, P501 HCAPLUS

=> d bib abs hitstr 8

L70 ANSWER 8 OF 58 HCAPLUS COPYRIGHT 2000 ACS

AN 1999:421635 HCAPLUS

DN 131:74462

TI Hydrogenation of benzenepolycarboxylic acids or their derivatives by use of macroporous catalysts

IN Brunner, Melanie; Bottcher, Arnd; Breitscheidel, Boris; Halbritter, Klaus;

Henkelmann, Jochem; Thil, Lucien; Pinkos, Rolf

PA BASF Aktiengesellschaft, Germany

SO PCT Int. Appl., 43 pp.

CODEN: PIXXD2

DT Patent

LA German

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9932427	A1	19990701	WO 1998-EP8346	19981218
	W: AU, BR, CA, CN, ID, IN, JP, KR, MX, SG, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	DE 19756913	A1	19990624	DE 1997-19756913	19971219
	DE 19832088	A1	20000120	DE 1998-19832088	19980716
	AU 9926133	A1	19990712	AU 1999-26133	19981218
	EP 1042273	A1	20001011	EP 1998-966901	19981218

R: BE, DE, ES, FR, GB, IT

PRAI DE 1997-19756913 19971219

DE 1998-19832088 19980716

WO 1998-EP8346 19981218

AB A benzenepolycarboxylic acid and/or deriv. thereof is hydrogenated with a gas contg. H in the presence of a catalyst comprising a **Group VIII** metal deposited alone or together with .gtoreq.1 Group IB and/or VIIB metal on a macroporous support. Preferably the metal(s) represent(s) 0.01-30% of the catalyst wt., the principal metal is **Ru**, and the support has av. pore diam. .gtoreq.50 nm and BET surface .ltoreq.30 m²/g. The hydrogenated products are used as plasticizers in plastics. Thus, a catalyst contg. 0.05% **Ru** was obtained by impregnating Al₂O₃ having BET surface 238 m²/g and pore vol. 0.45 mL/g with a 0.8% **Ru**(NO₃)₃ soln., drying at 120.degree., and activating in a H atm. at 200.degree.. Hydrogenation of 197 g diisooctyl phthalate over 10 g of the catalyst at 80.degree./200 bars for 4 h gave diisooctyl hexahydrophthalate in 99.7% yield at 100% conversion.

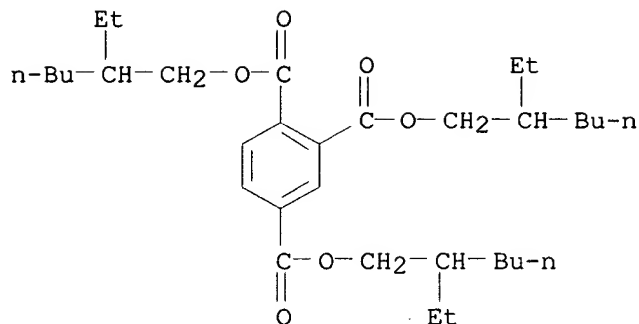
IT 3319-31-1, Tris(2-ethylhexyl) trimellitate

RL: RCT (Reactant)

(TOTM-I; **hydrogenation** of benzenepolycarboxylic acids or their derivs. by use of macroporous catalysts)

RN 3319-31-1 HCAPLUS

CN 1,2,4-Benzenetricarboxylic acid, tris(2-ethylhexyl) ester (7CI, 8CI, 9CI) (CA INDEX NAME)



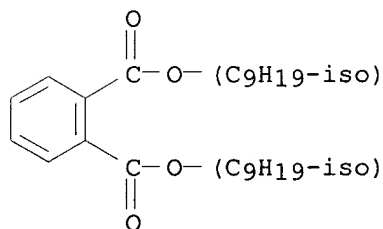
IT 28553-12-0, Diisononyl phthalate

RL: RCT (Reactant)

(Vestinol 9; **hydrogenation** of benzenepolycarboxylic acids or their derivs. by use of macroporous catalysts)

RN 28553-12-0 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, diisononyl ester (9CI) (CA INDEX NAME)



IT 4336-20-3P, Dimethyl hexahydrophthalate 52831-11-5P,

Trimethyl hexahydrotrimesate 67208-88-2P, Tris(2-ethylhexyl)

hexahydrotrimellitate 84731-64-6P, Diisodecyl hexahydrophthalate

92298-55-0P, Tetramethyl hexahydropyromellitate

166412-78-8P, Diisononyl hexahydrophthalate 185855-30-5P

, Trimethyl hexahydrotrimellitate 192728-83-9P

227472-91-5P 227472-92-6P, Diisododecyl

hexahydrophthalate 228853-14-3P, Diisopentyl

1,2-cyclohexanedicarboxylate 228853-15-4P

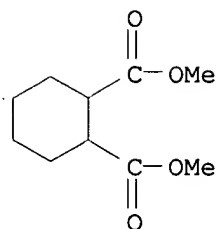
RL: IMF (Industrial manufacture); PREP (Preparation)

(hydrogenation of benzenepolycarboxylic acids or their derivs. by use of macroporous catalysts)

RN 4336-20-3 HCAPLUS

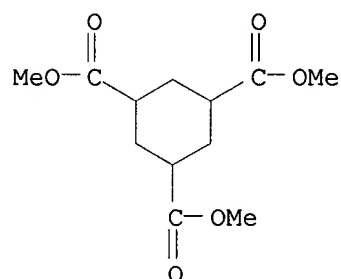
CN 1,2-Cyclohexanedicarboxylic acid, dimethyl ester (6CI, 7CI, 8CI, 9CI)

(CA INDEX NAME)



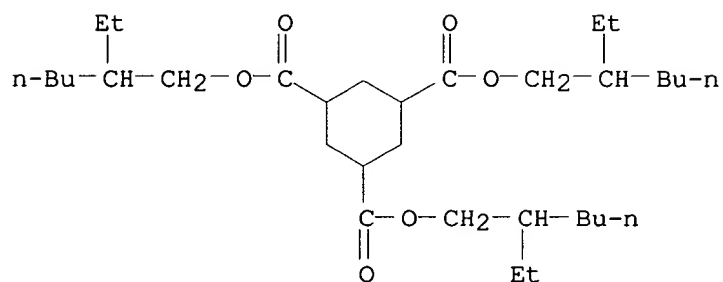
RN 52831-11-5 HCAPLUS

CN 1,3,5-Cyclohexanetricarboxylic acid, trimethyl ester (6CI, 7CI, 9CI) (CA INDEX NAME)



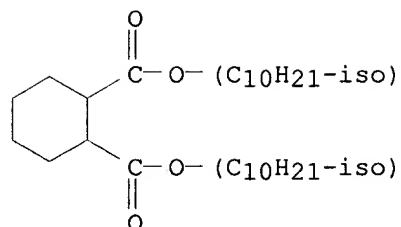
RN 67208-88-2 HCAPLUS

CN 1,3,5-Cyclohexanetricarboxylic acid, tris(2-ethylhexyl) ester (9CI) (CA INDEX NAME)



RN 84731-64-6 HCAPLUS

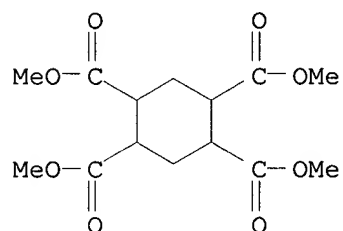
CN 1,2-Cyclohexanedicarboxylic acid, diisodecyl ester (9CI) (CA INDEX NAME)



RN 92298-55-0 HCAPLUS

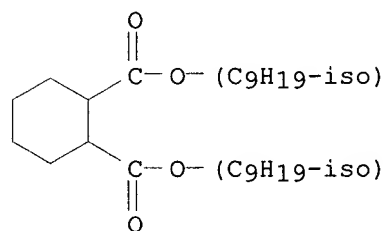
CN 1,2,4,5-Cyclohexanetetracarboxylic acid, tetramethyl ester (6CI, 7CI, 9CI)

(CA INDEX NAME)



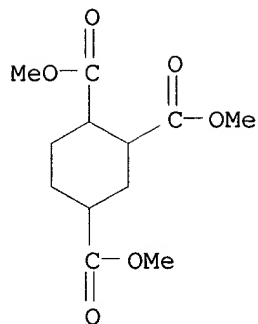
RN 166412-78-8 HCAPLUS

CN 1,2-Cyclohexanedicarboxylic acid, diisononyl ester (9CI) (CA INDEX NAME)



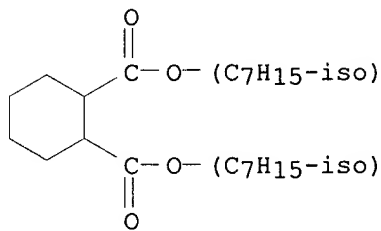
RN 185855-30-5 HCAPLUS

CN 1,2,4-Cyclohexanetricarboxylic acid, trimethyl ester (9CI) (CA INDEX NAME)



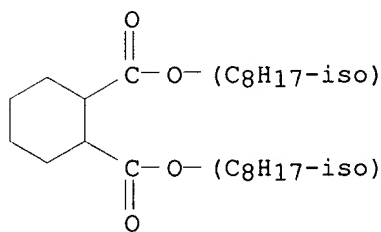
RN 192728-83-9 HCAPLUS

CN 1,2-Cyclohexanedicarboxylic acid, diisohexyl ester (9CI) (CA INDEX NAME)



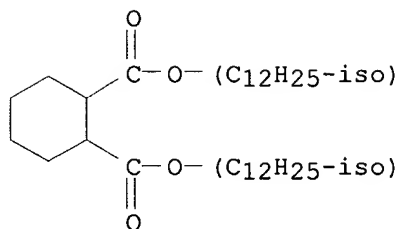
RN 227472-91-5 HCAPLUS

CN 1,2-Cyclohexanedicarboxylic acid, diisooctyl ester (9CI) (CA INDEX NAME)



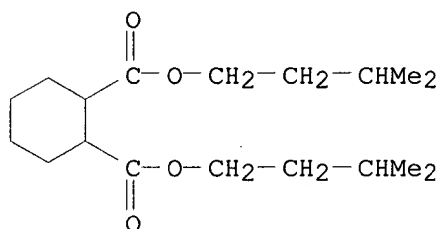
RN 227472-92-6 HCAPLUS

CN 1,2-Cyclohexanedicarboxylic acid, diisododecyl ester (9CI) (CA INDEX NAME)



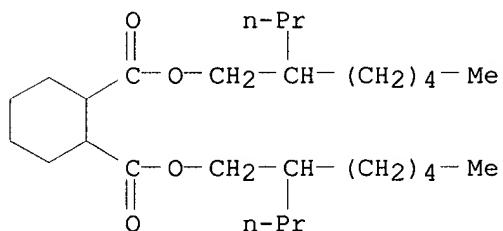
RN 228853-14-3 HCAPLUS

CN 1,2-Cyclohexanedicarboxylic acid, bis(3-methylbutyl) ester (9CI) (CA INDEX NAME)



RN 228853-15-4 HCAPLUS

CN 1,2-Cyclohexanedicarboxylic acid, bis(2-propylheptyl) ester (9CI) (CA INDEX NAME)



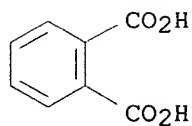
IT 88-99-3D, 1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters 117-81-7, Diisooctyl phthalate 131-11-3, Dimethyl phthalate 605-50-5, Diisopentyl phthalate 635-10-9, Tetramethyl pyromellitate 2459-10-1, Trimethyl trimellitate 2672-58-4, Trimethyl trimesate 26761-40-0, Jayflex DIDP 27554-06-9, Diisododecyl phthalate 53306-54-0

RL: RCT (Reactant)

(hydrogenation of benzenepolycarboxylic acids or their derivs. by use of macroporous catalysts)

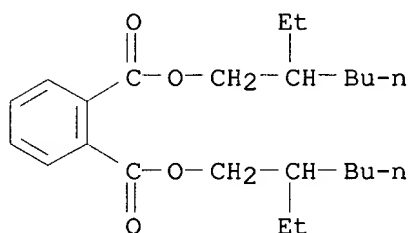
RN 88-99-3 HCAPLUS

CN 1,2-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)



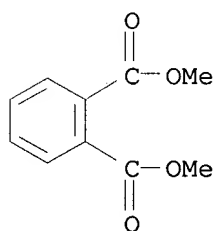
RN 117-81-7 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester (9CI) (CA INDEX NAME)



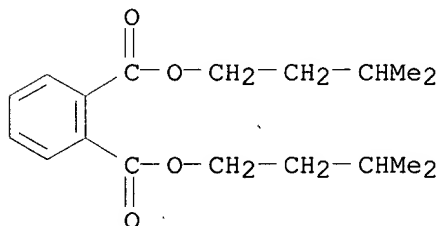
RN 131-11-3 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, dimethyl ester (9CI) (CA INDEX NAME)



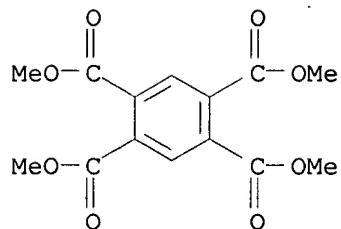
RN 605-50-5 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, bis(3-methylbutyl) ester (9CI) (CA INDEX NAME)



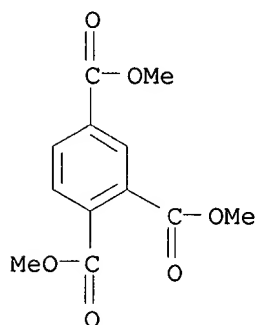
RN 635-10-9 HCAPLUS

CN 1,2,4,5-Benzenetetracarboxylic acid, tetramethyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



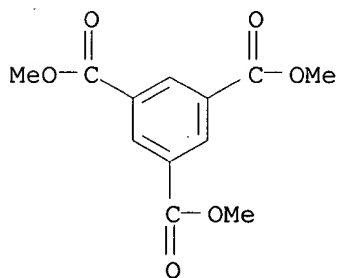
RN 2459-10-1 HCAPLUS

CN 1,2,4-Benzenetricarboxylic acid, trimethyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



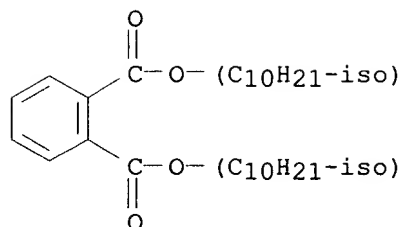
RN 2672-58-4 HCAPLUS

CN 1,3,5-Benzenetricarboxylic acid, trimethyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



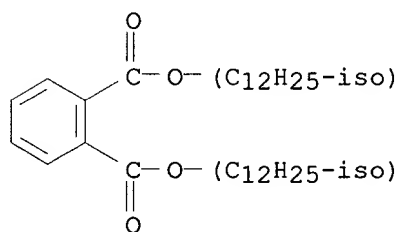
RN 26761-40-0 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, diisodecyl ester (9CI) (CA INDEX NAME)



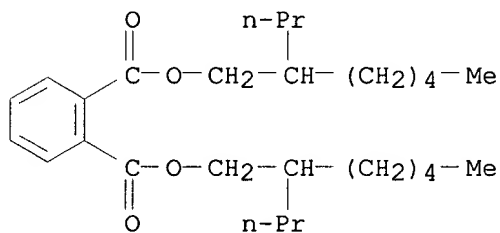
RN 27554-06-9 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, diisododecyl ester (9CI) (CA INDEX NAME)



RN 53306-54-0 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, bis(2-propylheptyl) ester (9CI) (CA INDEX NAME)



RE.CNT 6

RE

- (1) Bruce, L; US 5286898 A 1994 HCAPLUS
 - (2) New Japan Chemical Co Ltd; JP 06306252 A 1994
 - (3) New Japan Chemical Co Ltd; JP 07011074 A 1995
 - (4) New Japan Chemical Co Ltd; WO 9721792 A 1997
 - (5) Towa Chemical Industry Co Ltd; EP 0603825 A 1994
- ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d bib abs hitstr 9

L70 ANSWER 9 OF 58 HCAPLUS COPYRIGHT 2000 ACS

AN 1999:326751 HCAPLUS

DN 131:157816

TI **Rhodium** amine complexes tethered on silica-supported metal catalysts. Highly active catalysts for the hydrogenation of arenes

AU Gao, Hanrong; Angelici, Robert J.

CS Department of Chemistry and Ames Laboratory, Iowa State University, Ames, IA, USA

SO New J. Chem. (1999), 23(6), 633-640

CODEN: NJCHE5; ISSN: 1144-0546

PB Royal Society of Chemistry

DT Journal

LA English

OS CASREACT 131:157816

AB **Rh** amine complexes, $\text{RhCl}(\text{CO})_2[\text{Et}_2\text{N}(\text{CH}_2)_3\text{Si}(\text{OCH}_3)_3]$ (**Rh**-NET₂), $\text{RhCl}(\text{CO})_2[\text{H}_2\text{N}(\text{CH}_2)_3\text{Si}(\text{OC}_2\text{H}_5)_3]$ (**Rh**-NH₂) and $\text{RhCl}(\text{COD})[\text{H}_2\text{NCH}_2\text{CH}_2\text{NH}(\text{CH}_2)_3\text{Si}(\text{OCH}_3)_3]$ (**Rh**(COD)(N-N)),

were tethered to the SiO₂-supported metal heterogeneous catalysts, M-SiO₂ (M = Pd, Ni, Au), to give the TCSM (tethered complex on supported metal) catalysts, **Rh**-NET₂/M-SiO₂ (M = Pd, Ni, Au), **Rh**-NH₂/Pd-SiO₂ and **Rh**(COD)(N-N)/Pd-SiO₂. These TCSM catalysts exhibit activities, at 40.degree. and 1 atm of H₂ pressure, for the hydrogenation of arenes that are higher than those of the sep.

homogeneous

Rh amine complexes, the sep. SiO₂-supported metal heterogeneous catalysts or the **Rh** complex catalysts tethered on just SiO₂.

The activities of the TCSM catalysts are strongly affected by both the tethered **Rh** amine complex and the SiO₂-supported metal. Among these TCSM catalysts, **Rh**-NET₂/Pd-SiO₂ exhibits the

highest activity for the hydrogenation of toluene; its max. TOF

is 7.2 mol H₂ (mol **Rh** min)⁻¹ while its TO is 1919 mol H₂ (mol

Rh)⁻¹ during a 5 h period. IR(DRIFT) spectral studies

of the TCSM catalysts before and after being used for the hydrogenation

of

toluene show that during the hydrogenation, the two CO ligands

of **Rh**-NET₂/M-SiO₂ (M = Pd, Ni, Au) are lost from the **Rh**

center. After standing in air for one month, **Rh**-NET₂/Pd-SiO₂

becomes more active for the hydrogenation of toluene, but the activity of the air-aged **Rh**(COD)(N-N)/Pd-SiO₂ is lower than that of the

fresh catalyst.

IT 120-61-6

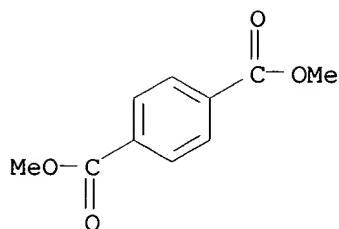
RL: RCT (Reactant)

(prepn. of **rhodium** amine complexes tethered on

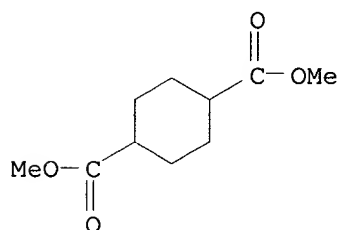
silica-supported transition metals as highly active catalysts for hydrogenation of arenes)

RN 120-61-6 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, dimethyl ester (9CI) (CA INDEX NAME)



IT 94-60-0P, Dimethyl 1,4-cyclohexanedicarboxylate
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of **rhodium** amine complexes tethered on
silica-supported transition metals as highly active catalysts for
hydrogenation of arenes)
RN 94-60-0 HCAPLUS
CN 1,4-Cyclohexanedicarboxylic acid, dimethyl ester (6CI, 7CI, 8CI, 9CI)
(CA INDEX NAME)



RE.CNT 54

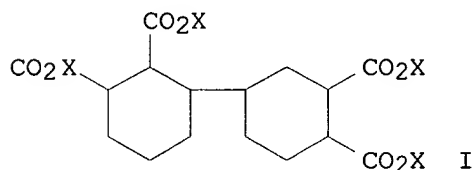
RE

- (1) Allum, K; J Catal 1976, V43, P331 HCAPLUS
 - (2) Amer, I; J Mol Catal 1986, V34, P221 HCAPLUS
 - (3) Bartholin, M; J Mol Catal 1977-1978, V3, P17 HCAPLUS
 - (4) Basu, P; J Am Chem Soc 1988, V110, P2074 HCAPLUS
 - (5) Bennett, M; J Chem Soc Chem Commun 1978, P582 HCAPLUS
- ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d bib abs hitstr 10

L70 ANSWER 10 OF 58 HCAPLUS COPYRIGHT 2000 ACS
AN 1999:312702 HCAPLUS
DN 130:352043
TI Preparation of dicyclohexyl-2,3,3',4'-tetracarboxylic acids or their dianhydride
IN Yamamoto, Tomohiko; Murakami, Toru; Nishino, Toshiyuki
PA Ube Industries, Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

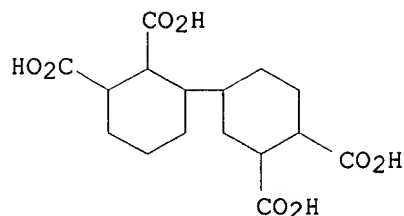
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11130723	A2	19990518	JP 1997-292328	19971024
OS	CASREACT 130:352043; MARPAT 130:352043				
GI					



AB Dicyclohexyl-2,3,3',4'-tetracarboxylic acids I (X = H, C.g.toreq.1 alkyl) or dicyclohexyl-2,3,3',4'-tetracarboxylic dianhydride was prepd. by hydrogenation of biphenyl-2,3,3',4'-tetracarboxylic acid esters in the presence of hydrogenation catalysts such as noble metal hydride catalysts, supported noble metal catalysts, etc., optional hydrolysis, and optional dehydration. Biphenyl-2,3,3',4'-tetracarboxylic acid Me ester (77.1 g; prepd. from di-Me orthophthalate) was hydrogenated with Rh/C in THF under 30 kg/cm² H at 100.degree. to give 73.0 g dicyclohexyl-2,3,3',4'-tetracarboxylic acid Me ester, which (40 g) was hydrolyzed in H₂O at 200.degree. for 8 h to give 33.2 g dicyclohexyl-2,3,3',4'-tetracarboxylic acid.

IT 224621-18-5P
RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. of dicyclohexyltetracarboxylic acids or their dianhydride by hydrogenation of biphenyltetracarboxylic acids, optional hydrolysis, and dehydration)

RN 224621-18-5 HCAPLUS
CN [1,1'-Bicyclohexyl]-2,3,3',4'-tetracarboxylic acid (9CI) (CA INDEX NAME)



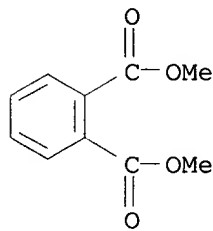
IT 131-11-3

RL: RCT (Reactant)

(prepn. of dicyclohexyltetracarboxylic acids or their dianhydride by
hydrogenation of biphenyltetracarboxylic acids, optional
hydrolysis, and dehydration)

RN 131-11-3 HCAPLUS

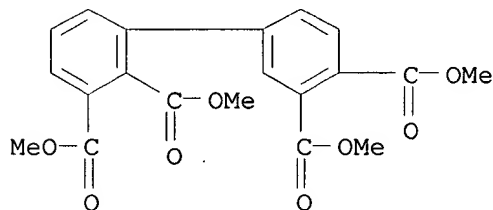
CN 1,2-Benzenedicarboxylic acid, dimethyl ester (9CI) (CA INDEX NAME)



IT 36978-36-6P 224621-17-4P

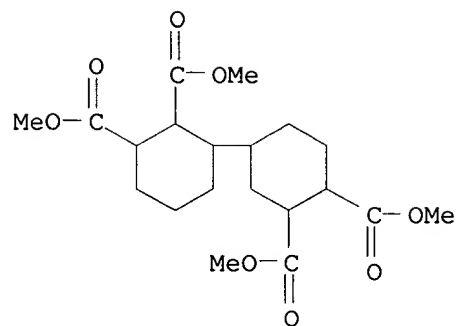
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. of dicyclohexyltetracarboxylic acids or their dianhydride by
hydrogenation of biphenyltetracarboxylic acids, optional hydrolysis,
and dehydration)

RN 36978-36-6 HCAPLUS

CN [1,1'-Biphenyl]-2,3,3',4'-tetracarboxylic acid, tetramethyl ester (9CI)
(CA INDEX NAME)

RN 224621-17-4 HCAPLUS

CN [1,1'-Bicyclohexyl]-2,3,3',4'-tetracarboxylic acid, tetramethyl ester
(9CI) (CA INDEX NAME)



=> d bib abs hitstr 12

L70 ANSWER 12 OF 58 HCAPLUS COPYRIGHT 2000 ACS

AN 1998:789112 HCAPLUS

DN 130:14320

TI Hydrogenation process and catalysts for producing monomer-grade cycloaliphatic alcohols from aromatic carboxylic acids, esters or anhydrides

IN Fischer, Rolf; Pinkos, Rolf; Wulff-Doring, Joachim

PA Basf A.-G., Germany

SO PCT Int. Appl., 14 pp.

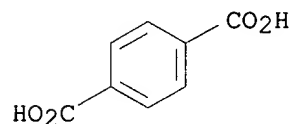
CODEN: PIXXD2

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9852892	A1	19981126	WO 1998-EP2778	19980512
	W: CN, JP, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	DE 19720606	A1	19981210	DE 1997-19720606	19970516
	EP 983220	A1	20000308	EP 1998-929301	19980512
	R: BE, DE, ES, FR, GB, IT, NL				
PRAI	DE 1997-19720606		19970516		
	WO 1998-EP2778		19980512		
AB	Monomer-grade cycloaliph. alcs. [e.g., 1,4-bis(hydroxymethyl)cyclohexane] are prep'd. in high yield and selectivity by the 1-step hydrogenation of arom. carboxylic acids (e.g., terephthalic acid), esters, or anhydrides, in the presence of hydrogen and a catalyst which contains .gtoreq.1 of				
Pd,	Ru, Pt, and Re, in either metallic or oxide form at .ltoreq.200.degree..				
IT	100-21-0, Terephthalic acid, reactions				
	RL: RCT (Reactant)				
	(hydrogenation process and catalysts for producing monomer-grade cycloaliph. alcs. from arom. carboxylic acids or esters or anhydrides)				
RN	100-21-0 HCAPLUS				
CN	1,4-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)				



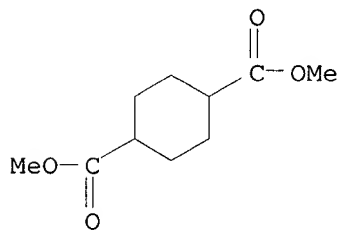
RE.CNT 1

RE

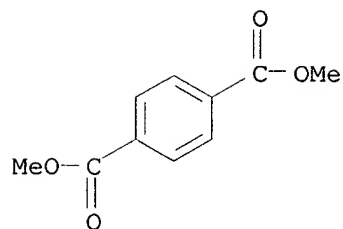
(1) Toyo Spinning Co; JP 52000242 A

=> d bib abs hitstr 11

L70 ANSWER 11 OF 58 HCAPLUS COPYRIGHT 2000 ACS
AN 1999:99437 HCAPLUS
DN 130:239124
TI Preparation of layer structure-controlled Ru-Sn-Al₂O₃ catalysts and their reactivity
AU Toba, M.; Tanaka, S.; Niwa, S.; Mizukami, F.; Koppany, Z.; Guczi, L.
CS National Institute of Materials and Chemical Research, Tsukuba, 305, Japan
SO J. Sol-Gel Sci. Technol. (1998), 13(1/2/3), 1037-1041
CODEN: JSGTEC; ISSN: 0928-0707
PB Kluwer Academic Publishers
DT Journal
LA English
AB In order to achieve functional group selective **hydrogenation**, the layer structure of Ru-Sn-Al₂O₃ **catalysts** was controlled by using sol-gel, powder impregnation and combined sol-gel impregnation methods. The properties of the catalysts and effectiveness in hydrogenation of di-Me terephthalate were examd. The surface Sn contents of the catalysts characterized by XPS depended on the prepn. method, in spite of almost the same bulk Ru and Sn compns. measured by X-ray fluorescence analyses. TPR and CO adsorption of the catalysts also depended on the prepn. method. With regard to the conversion rate of di-Me terephthalate and the rate of product conversion from Me 4-hydroxymethyl benzoate to p-xylene via Me p-toluate, Ru impregnation catalysts had higher rates than the other catalysts.
IT 94-60-0P, Dimethyl 1,4-cyclohexanedicarboxylate
RL: BYP (Byproduct); PREP (Preparation)
(effect of prepn. method and layer structure of Ru-Sn-Al₂O₃ **catalysts** on activity in selective **hydrogenation** of di-Me terephthalate)
RN 94-60-0 HCAPLUS
CN 1,4-Cyclohexanedicarboxylic acid, dimethyl ester (6CI, 7CI, 8CI, 9CI)
(CA INDEX NAME)



IT 120-61-6, Dimethyl terephthalate
RL: RCT (Reactant)
(effect of prepn. method and layer structure of Ru-Sn-Al₂O₃ **catalysts** on activity in selective **hydrogenation** of di-Me terephthalate)
RN 120-61-6 HCAPLUS
CN 1,4-Benzenedicarboxylic acid, dimethyl ester (9CI) (CA INDEX NAME)
Searched by John Dantzman 703-308-4488



RE.CNT 7

RE

(1) Cheah, K; Journal of American Oil Chemists' Society 1992, V69, P410
HCAPLUS

(2) Galvagno, S; Catalysis Letters 1991, V8, P9 HCAPLUS

(4) Ishii, K; Journal of American Oil Chemists' Society 1996, V73, P465
HCAPLUS

(5) Narasimhan, C; Applied Catalysis 1989, V48, PL1 HCAPLUS

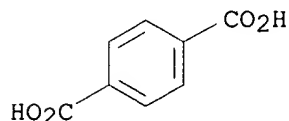
(6) Narita, T; Journal of Catalysis 1987, V103, P492 HCAPLUS

ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d bib abs hitstr 13

L70 ANSWER 13 OF 58 HCAPLUS COPYRIGHT 2000 ACS
AN 1998:764166 HCAPLUS
DN 130:14318
TI Hydrogenation catalyst comprising palladium deposited on activated carbon
IN Malentacchi, Marinella; Cavalli, Luigi; Rubini, Carlo
PA Sud Chemie Mt S.R.L., Italy
SO Eur. Pat. Appl., 7 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 879641	A1	19981125	EP 1998-108153	19980505
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 11090223	A2	19990406	JP 1998-110824	19980421
	CA 2237027	AA	19981119	CA 1998-2237027	19980507
	NO 9802261	A	19981120	NO 1998-2261	19980518
	CN 1205244	A	19990120	CN 1998-109754	19980518
	BR 9801657	A	19991005	BR 1998-1657	19980518
	AU 9867108	A1	19981119	AU 1998-67108	19980519
	US 6066589	A	20000523	US 1998-81335	19980519
PRAI	IT 1997-MI1161		19970519		
AB	The catalysts comprise metallic Pd supported on activated carbon, wherein .ltoreq.50% of Pd is comprised within a surface layer with a depth of .ltoreq.50 .mu., the remainder being comprised in a layer of 50-400 .mu. deep. The catalysts can be used in particular in purifying terephthalic acid obtained by oxidn. of p-xylene. They are prepd. by dry impregnation of the support.				
IT	100-21-0P, Terephthalic acid, preparation				
	RL: PUR (Purification or recovery); PREP (Preparation)				
	(hydrogenation catalysts contg. Pd deposited on activated carbon for purifn. of terephthalic acid)				
RN	100-21-0 HCAPLUS				
CN	1,4-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)				



RE.CNT 5

RE

- (1) Carl, K; US 3138560 A 1964
- (2) Hans, F; US 4093559 A 1978
- (3) Henkel Kgaa; WO 9318856 A 1993
- (4) Imre, P; US 4467111 A 1984
- (5) Krishnankutty, N; JOURNAL OF CATALYSIS 1995, V155(2), P312 HCAPLUS

Searched by John Dantzman 703-308-4488

KHARE

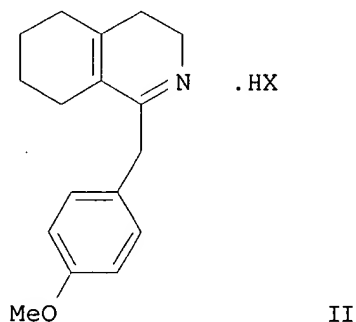
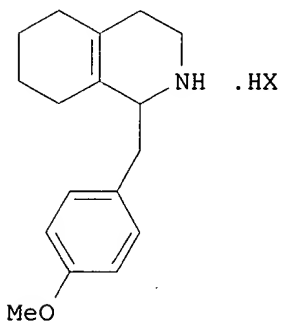
09/581843

Page 39

=> d bib abs hitstr 14

L70 ANSWER 14 OF 58 HCAPLUS COPYRIGHT 2000 ACS
 AN 1998:466328 HCAPLUS
 DN 129:109000
 TI Preparation of optically active (R- or S)-1-(4-methoxybenzyl)-
 1,2,3,4,5,6,7,8-octahydroisoquinolines via asymmetric hydrogenation
 IN Broger, Emil Albin; Scalone, Michelangelo; Wehrli, Christof
 PA F. Hoffmann-La Roche A.-G., Switz.
 SO Eur. Pat. Appl., 15 pp.
 CODEN: EPXXDW
 DT Patent
 LA German
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 850931	A2	19980701	EP 1997-122627	19971222
	EP 850931	A3	20000426		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	US 5880285	A	19990309	US 1997-993299	19971218
	CN 1186073	A	19980701	CN 1997-125550	19971219
	JP 10182612	A2	19980707	JP 1997-352502	19971222
	JP 3040366	B2	20000515		
PRAI	EP 1996-120844		19961223		
OS	CASREACT 129:109000; MARPAT 129:109000				
GI					



AB Title compds. (I; HX = HBF₄, H₂SO₄, PPF₆, HBr, HI, HCl, HSbF₆, HClO₄, alkylsulfonic acids, picric acid, formic acid, alkyl- and arylcarboxylic acids and -dicarboxylic acids), were prepd. by asym. **hydrogenation** of hexahydroisoquinolines (II; variables as above) using **iridium-diphosphine catalysts**. Thus, 1-(4-methoxybenzyl)-3,4,5,6,7,8-hexahydroisoquinoline tetrafluoroborate (prepn. given) was autoclaved with Bu₄NI, [IrCl(COD)]₂ and (4R,5R)-O-isopropylidene-2,3-dihydroxy-1,4-bis[bis-(4-methoxy-3,5-dimethylphenyl)phosphino]butane in PhMe/MeOH under 100 bar H₂ for 44 h at 25.degree. to give (S)-1-(4-methoxybenzyl)-3,4,5,6,7,8-hexahydroisoquinoline tetrafluoroborate. By 4J5h6, Daftzman 703-308-4488

IT octahydroisoquinoline with 90% selectivity in 61% enantiomeric excess.
209794-33-2P

RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of optically active (R- or S)-1-(4-methoxybenzyl)-
1,2,3,4,5,6,7,8-octahydroisoquinolines via asym. **hydrogenation**
)

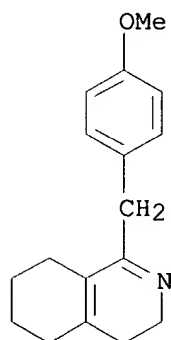
RN 209794-33-2 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, compd. with 3,4,5,6,7,8-hexahydro-1-[(4-methoxyphenyl)methyl]isoquinoline (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 51072-35-6

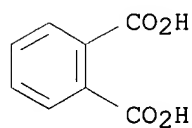
CMF C17 H21 N O



CM 2

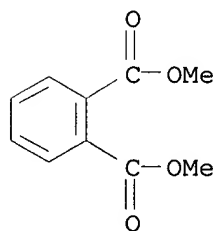
CRN 88-99-3

CMF C8 H6 O4



=> d bib abs hitstr 15

L70 ANSWER 15 OF 58 HCAPLUS COPYRIGHT 2000 ACS
AN 1998:433444 HCAPLUS
DN 129:135719
TI Homogeneous **ruthenium catalyzed hydrogenation**
of esters to alcohols
AU Teunissen, Herman T.
CS Institute of Molecular Chemistry, Universiteit van Amsterdam, Amsterdam,
1018 WV, Neth.
SO Chem. Commun. (Cambridge) (1998), (13), 1367-1368
CODEN: CHCOFS; ISSN: 1359-7345
PB Royal Society of Chemistry
DT Journal
LA English
OS CASREACT 129:135719
AB The homogeneous catalytic hydrogenation of arom. and aliph. esters to the
corresponding alcs. by a catalyst generated in situ from [Ru
(acac)₃] and MeC(CH₂PPh₂)₃ in an alc. solvent under H₂ pressure of 85 bar
at 100-120 .degree.C, is described.
IT **131-11-3**, Dimethyl phthalate
RL: RCT (Reactant)
(homogeneous **ruthenium catalyzed**
hydrogenation of esters to alcs.)
RN 131-11-3 HCAPLUS
CN 1,2-Benzenedicarboxylic acid, dimethyl ester (9CI) (CA INDEX NAME)



=> d bib abs hitstr 16

L70 ANSWER 16 OF 58 HCAPLUS COPYRIGHT 2000 ACS

AN 1998:108091 HCAPLUS

DN 128:167205

TI Preparation of 1,4-cyclohexanedimethanol by two-step hydrogenation of dialkyl terephthalate

IN Murai, Nobuyuki; Iwasaka, Hiroshi; Murai, Koya; Takeuchi, Takeshi

PA Mitsubishi Chemical Industries Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.

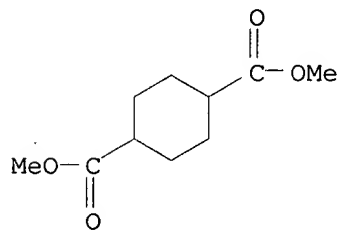
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	---	-----	-----	-----
PI	JP 10045645	A2	19980217	JP 1996-208539	19960807
AB	1,4-Cyclohexanedimethanol (I), useful as a material for polyesters, etc., is prepd. by hydrogenation of dialkyl terephthalate by using noble metal hydrogenation catalysts, followed by hydrogenation of the resulting dialkyl 1,4-cyclohexanedicarboxylate by using Cu-Zn-alumina catalysts. A soln. of 10% di-Me terephthalate in di-Me 1,4-cyclohexanedicarboxylate (II) was hydrogenated over Ru/alumina at 120.degree. and 40 kg/cm2 (99.3% conversion), mixed with fresh II, and hydrogenated over Cl8-HC (Cu/Zn/alumina catalyst) at 240.degree. for 140 kg/cm2 to give 69.4% I.				
IT	94-60-0P, Dimethyl 1,4-cyclohexanedicarboxylate RL: IMF (Industrial manufacture); NUU (Nonbiological use, unclassified); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); USES (Uses) (prepn. of 1,4-cyclohexanedimethanol by two-step hydrogenation of dialkyl terephthalate)				
RN	94-60-0 HCAPLUS				
CN	1,4-Cyclohexanedicarboxylic acid, dimethyl ester (6CI, 7CI, 8CI, 9CI)				
(CA	INDEX NAME)				



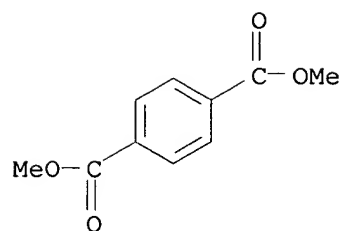
IT 120-61-6, Dimethyl terephthalate

RL: RCT (Reactant)

(prepn. of 1,4-cyclohexanedimethanol by two-step hydrogenation of dialkyl terephthalate)

RN 120-61-6 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, dimethyl ester (9CI) (CA INDEX NAME)



=> d bib abs hitstr 17

L70 ANSWER 17 OF 58 HCAPLUS COPYRIGHT 2000 ACS

AN 1998:55603 HCAPLUS

DN 128:102511

TI Process for the preparation of cyclohexanedimethanols

IN Itoh, Hiroshi; Yoshida, Yasuhisa; Iwamura, Taiichiro; Nakazawa, Mikio

PA New Japan Chemical Co., Ltd., Japan; Itoh, Hiroshi; Yoshida, Yasuhisa; Iwamura, Taiichiro; Nakazawa, Mikio

SO PCT Int. Appl., 74 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9800383	A1	19980108	WO 1997-JP2188	19970625
	W: BR, CN, JP, KR, MX, US				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT,				

SE

EP 922690	A1	19990616	EP 1997-928455	19970625
R: BE, CH, DE, ES, FR, GB, IT, LI, LU, NL, PT				

CN 1223631	A	19990721	CN 1997-195946	19970625
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BR 9710457	A	19990817	BR 1997-10457	19970625
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PRAI JP 1996-188759 19960628

JP 1996-359373 19961022

JP 1996-356176 19961224

JP 1997-59931 19970226

WO 1997-JP2188 19970625

OS MARPAT 128:102511

AB The cyclohexanedimethanols useful as monomers or modifiers for polymers such as polyesters and polyurethane are manufd. by hydrogenating an alkyl ester of cyclohexanedicarboxylic acid by a fixed-bed continuous process

in

the presence of a molded copper catalyst under the conditions of reaction temp. of 200-280.degree., H pressure of 185-300 kg/cm2 and feed rate of H gas of 1-40 cm/s in superficial linear velocity. The alkyl ester of cyclohexanedicarboxylic acid used as the raw material can typically be prepd. by the nuclear hydrogenation of a dialkyl ester of an arom. dicarboxylic acid, e.g., di-Me terephthalate, in the presence of a molded catalyst contg. **ruthenium** supported thereon according to a fixed-bed continuous process.

IT 94-60-0, Dimethyl 1,4-cyclohexanedicarboxylate 120-61-6

1459-93-4 62638-06-6, Dimethyl 1,3-

cyclohexanedicarboxylate

RL: RCT (Reactant)

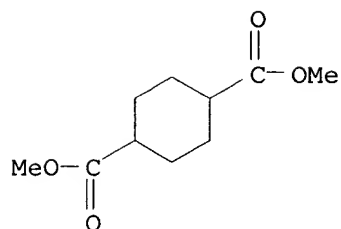
(hydrogenation of, in process for prepn. of cyclohexanedimethanols)

RN 94-60-0 HCAPLUS

CN 1,4-Cyclohexanedicarboxylic acid, dimethyl ester (6CI, 7CI, 8CI, 9CI)

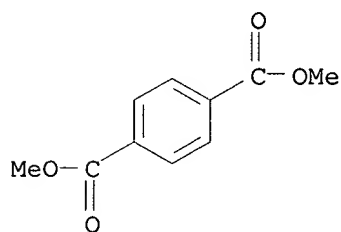
(CA

INDEX NAME)



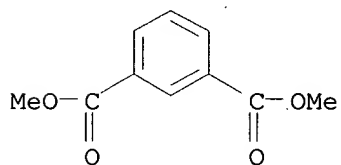
RN 120-61-6 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, dimethyl ester (9CI) (CA INDEX NAME)



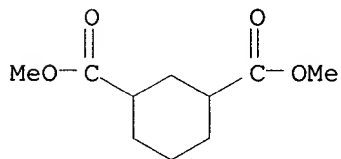
RN 1459-93-4 HCAPLUS

CN 1,3-Benzenedicarboxylic acid, dimethyl ester (9CI) (CA INDEX NAME)



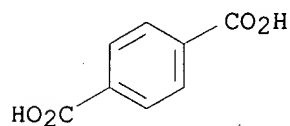
RN 62638-06-6 HCAPLUS

CN 1,3-Cyclohexanedicarboxylic acid, dimethyl ester (6CI, 7CI, 9CI) (CA INDEX NAME)



=> d bib abs hitstr 18

L70 ANSWER 18 OF 58 HCAPLUS COPYRIGHT 2000 ACS
AN 1997:414710 HCAPLUS
DN 127:110128
TI Catalytic hydrogenation of nitrile-butadiene copolymer emulsion
AU Guo, Xiang-Yao; Rempel, G. L.
CS Dep. Chem. Eng., Univ. Waterloo, Waterloo, ON, NH2L 3G1, Can.
SO J. Appl. Polym. Sci. (1997), 65(4), 667-675
CODEN: JAPNAB; ISSN: 0021-8995
PB Wiley
DT Journal
LA English
AB Two process have been developed for the selective hydrogenation of the
C=C
bonds in nitrile-butadiene rubber emulsions (NBR emulsions) in the
presence of a no. of $\text{RuCl}_2(\text{PPh}_3)_3$ complex catalysts. One of the process
is carried out in a homogeneous system, in which an org. solvent, which
can dissolved the NBR polymer and catalyst and which is compatible with
the emulsion, is used. The other process is carried out in a
heterogeneous system, in which an org. solvent which is capable of
dissolving the catalyst and swelling the polymer particle but is not
miscible with the aq. emulsions phase, is used. In both processes,
quant.
hydrogenation of the C=C bonds of the NBR emulsion is achieved in the
presence of $\text{RuCl}_2(\text{PPh}_3)_3$. The addn. of a small amt. of additives such as
ferrous ammonium sulfate and certain carboxylic acids can improve the
activities of the Ru-based catalysts.
IT 100-21-0, Terephthalic acid, uses
RL: MOA (Modifier or additive use); USES (Uses)
(hydrogenation of nitrile rubber emulsion in presence of
ruthenium catalyst and)
RN 100-21-0 HCAPLUS
CN 1,4-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)



=> d bib abs hitstr 19

L70 ANSWER 19 OF 58 HCAPLUS COPYRIGHT 2000 ACS

AN 1997:63443 HCAPLUS

DN 126:105989

TI Charging of reactors with catalyst

AU Anon.

CS UK

SO Res. Discl. (1997), 393, 21 (No. 39317)

CODEN: RSDSBB; ISSN: 0374-4353

PB Kenneth Mason Publications Ltd.

DT Journal; Patent

LA English

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	RD 393017		19970110	
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PRAI	RD 1997-393017	19970110		
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AB Arom. carboxylic acids such as isophthalic acid and terephthalic acid are purified by hydrogenation of a soln. of the crude acid in an aq. medium. The hydrogenation is carried out in a reactor with fixed catalyst bed. The catalyst is usually in pellet form and typically comprises a noble metal or metals, such as palladium, platinum, or **rhodium** or combination thereof, on carbon or other support material. The catalyst

in the past charged manually into the reactor but this gives rise to problems

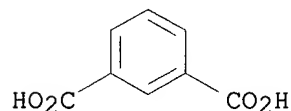
such as catalyst attrition which results in unwanted particle contaminating the product during the start up phase of the reactor operation. Also there are safety issues to be considered. The problem assocd. with manual loading of the catalyst can be reduced or eliminated by loading the catalyst by vacuum conveying system.

IT **121-91-5P**, Isophthalic acid, reactions

RL: PUR (Purification or recovery); RCT (Reactant); PREP (Preparation) (charging of reactors with **hydrogenation** catalyst for isophthalic acid)

RN 121-91-5 HCAPLUS

CN 1,3-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)

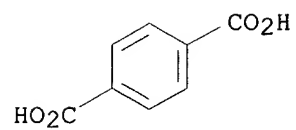


IT **100-21-0P**, Terephthalic acid, reactions

RL: PUR (Purification or recovery); RCT (Reactant); PREP (Preparation) (charging of reactors with **hydrogenation** catalyst for terephthalic acid)

RN 100-21-0 HCAPLUS

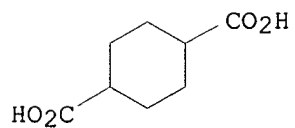
CN 1,4-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)



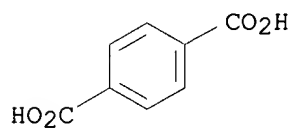
=> d bib abs hitstr 20

L70 ANSWER 20 OF 58 HCAPLUS COPYRIGHT 2000 ACS
AN 1996:593743 HCAPLUS
DN 125:225057
TI Noble metal Raney catalysts and preparation of hydrogenated compounds
using such catalysts
IN Morikawa, Kouhei; Hirayama, Shuuji; Ishimura, Yoshimasa; Suyama, Yuseki;
Nozawa, Tsutomu; Monzen, Hiroyuki; Miura, Motoo; Marumo, Kuniomi; Naito,
Taketoshi
PA Showa Denko K. K., Japan
SO Eur. Pat. Appl., 23 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	---	-----	-----	-----
PI	EP 724908	A1	19960807	EP 1996-100127	19960105
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT,				
SE	JP 08187432	A2	19960723	JP 1995-782	19950106
	EP 934920	A2	19990811	EP 1999-108002	19960105
	EP 934920	A3	19991222		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,				
IE	US 6018048	A	20000125	US 1997-989157	19971211
PRAI	JP 1995-782		19950106		
	US 1996-582668		19960104		
	EP 1996-100127		19960105		
AB	Noble metal (particularly Ru) Raney catalysts are used which can hydrogenate (1) aromaticity-exhibiting ring portions of org. compds., (2) carboxylic acids and their ester portions (carbonyl ester groups), (3) ring portions and carboxylic acid or their ester groups in compds. having such ring portions and carboxylic acid or their ester portions, and (4) ring portions and nitrile groups of arom. nitrile compds. to give the corresponding hydrogenated compds. The methods allow prepn. of hydrogenated compds. having hydrogenated arom. ring portions, hydrogenated carbonyl ester groups, hydrogenated arom. ring and carbonyl ester groups, or hydrogenated arom. rings and nitrile groups under milder hydrogen pressure and temp. conditions than conventional catalysts. Thus, a Raney Ru/Sn catalyst was prepd. and used to hydrogenate adipic acid (100% conversion) to 78% 1,6-hexanediol and 16% 6-hydroxycaproic acid. With an alumina-supported catalyst the resp. figures were 35, 1, and 30%.				
IT	1076-97-7P, 1,4-Cyclohexanedicarboxylic acid RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation) (Raney hydrogenation catalysts with improved yield and conversion)				
RN	1076-97-7 HCAPLUS				
CN	1,4-Cyclohexanedicarboxylic acid (8CI, 9CI) (CA INDEX NAME)				



IT 100-21-0, 1,4-Benzenedicarboxylic acid, reactions
RL: RCT (Reactant)
(substrate; Raney **hydrogenation** catalysts with improved yield
and conversion)
RN 100-21-0 HCAPLUS
CN 1,4-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)



=> d bib abs hitstr 21

L70 ANSWER 21 OF 58 HCAPLUS COPYRIGHT 2000 ACS

AN 1995:822975 HCAPLUS

DN 123:227688

TI Preparation of 1,3-cyclohexanedimethanol using **ruthenium hydrogenation catalysts**

IN Magara, Mitsuo; Onoda, Yoshimi; Yamazaki, Fumito; Yoneda, Susumu; Kato, Kazuaki

PA Towa Kasei Kogyo Kk, Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 06321823	A2	19941122	JP 1993-139228	19930519

OS CASREACT 123:227688

AB The title compd. is prepd. via hydrogenation of isophthalic acid dialkyl esters or their mixts. with hexahydroisophthalic acid dialkyl esters in the presence of **ruthenium hydrogenation catalysts** contg. 0.05-10 wt.% **ruthenium** metal at 90-240.degree., 5-150 kgf/cm2 and continuous hydrogenation of the products

in the presence of and then at 200-300.degree., 50-180 kgf/cm2. Thus, a mixt. of 80% di-Me hexahydroisophthalate and 20% di-Me isophthalate was heated with 0.5% **ruthenium hydrogenation catalyst** pellet supported on alumina at 120.degree., the molten mixt. was fed at an SV of 6 h-1 to a reactor, while at the same time hydrogen was fed at 18 mol fold of the starting material mixt. at 120.degree. to give 98.8% completely hydrogenated di-Me isophthalate. This is then hydrogenated over a copper-chromium catalyst (Cu-1164T) at 250.degree. to give 94.0% 1,3-cyclohexanedimethanol.

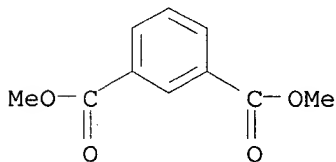
IT **1459-93-4**, Dimethyl isophthalate **62638-06-6**, Dimethyl hexahydroisophthalate

RL: RCT (Reactant)

(**hydrogenation** in presence of **ruthenium catalyst**)

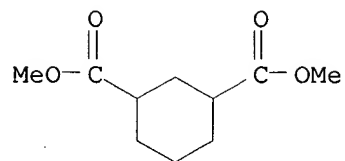
RN 1459-93-4 HCAPLUS

CN 1,3-Benzenedicarboxylic acid, dimethyl ester (9CI) (CA INDEX NAME)



RN 62638-06-6 HCAPLUS

CN 1,3-Cyclohexanedicarboxylic acid, dimethyl ester (6CI, 7CI, 9CI) (CA INDEX NAME)



=> d bib abs hitstr 22

L70 ANSWER 22 OF 58 HCAPLUS COPYRIGHT 2000 ACS

AN 1995:516386 HCAPLUS

DN 122:265232

TI Process for the selective **hydrogenation** of epoxyalkenes to epoxyalkanes using a **rhodium**-organophosphorus-polyunsaturated hydrocarbon **catalyst**

IN Puckette, Thomas A.

PA Eastman Chemical Company, USA

SO U.S., 9 pp.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5391773	A	19950221	US 1994-262122	19940617
	US 5498584	A	19960312	US 1994-311628	19940923
	WO 9535290	A1	19951228	WO 1995-US7083	19950605
	W: AU, BR, CA, CN, JP, KR				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	CA 2192690	AA	19951228	CA 1995-2192690	19950605
	AU 9526625	A1	19960115	AU 1995-26625	19950605
	AU 681798	B2	19970904		
	EP 765315	A1	19970402	EP 1995-921604	19950605
	EP 765315	B1	19980930		
	R: BE, DE, ES, FR, GB, IT, NL				
	CN 1155885	A	19970730	CN 1995-194606	19950605
	BR 9508035	A	19970916	BR 1995-8035	19950605
	JP 10501552	T2	19980210	JP 1995-502278	19950605
	ES 2121391	T3	19981116	ES 1995-921604	19950605
PRAI	US 1994-262122		19940617		
	WO 1995-US7083		19950605		

OS CASREACT 122:265232; MARPAT 122:265232

AB What is claimed is a process for the prepn. of epoxyalkanes and epoxycycloalkanes by hydrogenating under hydrogenation conditions of temp.

and pressure epoxyalkenes and epoxycycloalkenes in a catalyst soln. comprising (A) an inert, org. solvent and (B) catalyst components dissolved in said solvent comprising (i) **rhodium**, (ii) an organophosphorus compd. selected from trihydrocarbylphosphines and trihydrocarbyl phosphites, and (iii) a polyunsatd. hydrocarbon selected from alkadienes, cycloalkadienes, alkatrienes and cycloalkatrienes; wherein the ratio of moles of component (ii) to gram atoms of **rhodium** is about 3:1 to 50:1; and the ratio of moles of component (iii) to gram atoms of **rhodium** is about 2:1 to 150:1. Thus, e.g., a catalyst compn. consisted of a mixt. of tris(triphenylphosphine) **rhodium** chloride, tribenzylphosphine, 1,5-cyclooctadiene, and 2-heptanone; hydrogenation of 3,4-epoxy-1,2-butene resulted in 97.9% conversion of 3,4-epoxy-1,2-butene and 88.7% butylene oxide, 5.1% butyraldehyde and 6.2% butanol.

IT 131-11-3, Dimethyl phthalate

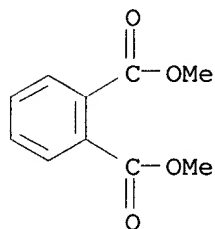
RL: NUU (Nonbiological use, unclassified); USES (Uses)
(solvent; selective **hydrogenation** of epoxyalkenes to

Searched by John Dantzman 703-308-4488

epoxyalkanes using a **rhodium**-organophosphorus-polyunsatd.
hydrocarbon **catalyst**)

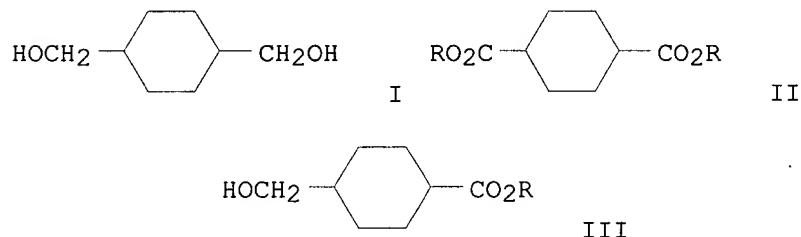
RN 131-11-3 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, dimethyl ester (9CI) (CA INDEX NAME)



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=> d bib abs hitstr 23
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L70	ANSWER 23 OF 58 HCAPLUS COPYRIGHT 2000 ACS				
AN	1994:680376 HCAPLUS				
DN	121:280376				
TI	Method for producing 1,4-cyclohexanedimethanol by catalytic hydrogenation of dialkyl terephthalate and related esters				
IN	Magara, Mitsuo; Onoda, Yoshimi; Yamazaki, Fumito; Yoneda, Susumu; Kato, Kazuaki				
PA	Towa Kasei Kogyo Kk, Japan				
SO	Jpn. Kokai Tokkyo Koho, 8 pp. CODEN: JKXXAF				
DT	Patent				
LA	Japanese				
FAN.CNT	1				
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 06192146	A2	19940712	JP 1992-357871	19921225
	JP 2528067	B2	19960828		
OS	CASREACT 121:280376; MARPAT 121:280376				
GI					



AB Manuf. of 1,4-cyclohexanedimethanol (I) comprises 2-stage catalytic hydrogenation: (1) in the first stage simultaneously introducing H and as the first raw material dialkyl terephthalate or dialkyl terephthalate and a first-stage hydrogenation product at SV 1-10 to the top or bottom of a fixed bed continuous **hydrogenation** app. packed with 0.05-10 wt.% **Ru hydrogenation catalyst**, carrying out the first stage **catalytic hydrogenation** at 90-240.degree., H pressure 5-150 kgf/cm², and the initial concn. of unreacted components 5-100 wt.%, and discharging the product and excess H from the top or bottom of the app. and (2) in the second stage simultaneously introducing H and as the second raw material the first-stage hydrogenation product or a mixt. of the first-stage hydrogenation product and compds. formed by bonding 1-10 compds. selected from I and di- or monoalkyl esters (II and III; R = alkyl) via transesterification at SV 0.1-1 to the top or bottom of a fixed bed continuous hydrogenation app. packed with 0.05-10 wt.% Cu chromite hydrogenation catalyst, carrying out the second stage hydrogenation at 200-300.degree., H pressure 50-180 kgf/cm², and the initial concn. of unreacted components 50-100 wt.%, and discharging the product and excess H from the top or bottom of the app. This process can use less expensive **Ru** rather than Pd, carry out the first-stage

Searched by John Dantzman 703-308-4488

hydrogenation under milder condition than those used in a prior art, and reduce the formation of impurities in the entire steps.

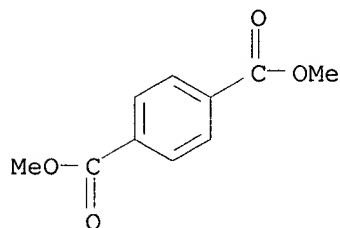
IT 120-61-6, Dimethyl terephthalate 120-61-6D, Dimethyl terephthalate, satd.

RL: RCT (Reactant)

(method for producing 1,4-cyclohexanedimethanol by catalytic hydrogenation of dialkyl terephthalate and related esters)

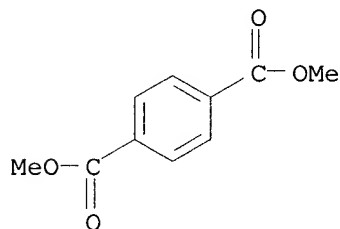
RN 120-61-6 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, dimethyl ester (9CI) (CA INDEX NAME)



RN 120-61-6 HCAPLUS

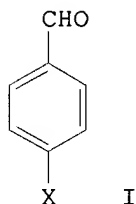
CN 1,4-Benzenedicarboxylic acid, dimethyl ester (9CI) (CA INDEX NAME)



=> d bib abs hitstr 24-40

L70 ANSWER 24 OF 58 HCAPLUS COPYRIGHT 2000 ACS
AN 1994:533689 HCAPLUS
DN 121:133689
TI Selective catalytic hydrogenation of aromatic aldehydes using titanium
oxide-supported palladium group metals as catalysts.
IN Bankmann, Martin; Brand, Reinhold; Freund, Andreas; Tacke, Thomas
PA Degussa A.-G., Germany
SO Eur. Pat. Appl., 22 pp.
CODEN: EPXXDW
DT Patent
LA German
FAN.CNT 1

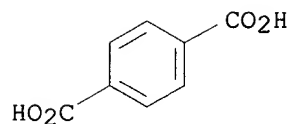
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	---	-----	-----	-----
PI	EP 606072	A1	19940713	EP 1994-100078	19940105
	EP 606072	B1	19980610		
	R: BE, DE, ES, FR, GB, IE, IT, NL				
	DE 4300297	A1	19940721	DE 1993-4300297	19930108
	DE 4300297	C2	19980129		
	ES 2118981	T3	19981001	ES 1994-100078	19940105
	BR 9400041	A	19940726	BR 1994-41	19940106
	US 5387726	A	19950207	US 1994-179621	19940107
	CN 1099740	A	19950308	CN 1994-100192	19940107
PRAI	DE 1993-4300297		19930108		
OS	CASREACT 121:133689; MARPAT 121:133689				
GI					



AB Title compds. (I; X = CO₂H, Me, halo), were catalytically hydrogenated
using a formed supported Pt group catalyst at 5-50 bar and
100-300.degree.
in the presence of a solvent and, optionally, org. acids. Thus,
4-carboxybenzaldehyde was hydrogenated in H₂O using a 0.5% Pd/TiO₂
rutile-type catalyst at 10 bar H and 150.degree. for 4 h to give
4-hydroxymethylbenzoic acid with 98% selectivity at 97.3% conversion of
starting material.

IT 100-21-0, Terephthalic acid, uses
RL: USES (Uses)
(additive, in catalytic **hydrogenation** of substituted
benzaldehydes)

RN 100-21-0 HCAPLUS
CN 1,4-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)



L70 ANSWER 25 OF 58 HCAPLUS COPYRIGHT 2000 ACS
 AN 1994:216792 HCAPLUS
 DN 120:216792
 TI Low pressure process for the hydrogenation of dimethyl
 benzenedicarboxylates to the corresponding dimethyl
 cyclohexanedicarboxylates
 IN Gustafson, Bruce L.; Tennant, Brent A.; Kuo, Yeong Jen; Price, Timothy W.
 PA Eastman Kodak Co., USA
 SO U.S., 5 pp.
 CODEN: USXXAM
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5286898	A	19940215	US 1993-76675	19930615
	WO 9429260	A1	19941222	WO 1994-US6266	19940603
	W: CA, JP, KR				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	CA 2165207	AA	19941222	CA 1994-2165207	19940603
	CA 2165207	C	19980818		
	EP 703894	A1	19960403	EP 1994-919348	19940603
	EP 703894	B1	19980826		
	R: BE, DE, ES, FR, GB, IT, NL				
	JP 08511775	T2	19961210	JP 1994-501972	19940603
	ES 2120054	T3	19981016	ES 1994-919348	19940603
	CN 1099745	A	19950308	CN 1994-106440	19940610
	CN 1042327	B	19990303		
PRAI	US 1993-76675		19930615		
	WO 1994-US6266		19940603		
OS	CASREACT 120:216792				
AB	<p>Di-Me cyclohexanedicarboxylates were prepd. by hydrogenation of the corresponding di-Me benzenedicarboxylates at 140-400.degree. and 10-200 bar H in the presence of supported catalysts contg. Pd and a second Group VIII metal selected from Ni, Pt, Ru, or a mixt. thereof deposited on an alumina support. Pd comprises 0.1-5 wt.% of the catalyst; the Pd dispersion is .gtoreq.15%, .gtoreq.90% of the Pd is located on the alumina at a depth <200 .mu. from the surface of the alumina; the second Group VIII metal comprises 0.001-1 wt% of the catalysts, and the alumina is alpha, theta, delta, gamma, eta, or a mixt. thereof. The use of the catalysts permits the process to be carried out at significantly lower pressures. Thus, di-Me terephthalate was hydrogenated at 125.1 bars abs. pressure and 155-177.degree. in the presence of di-Me 1,4-cyclohexanedicarboxylate using a catalyst contg.</p>				
1.0	<p>wt.% Pd and 1000 ppm Ni on theta alumina to give reaction rates 24-45% greater than those predicted for Pd/alumina catalyst.</p>				
IT	<p>120-61-6, Dimethyl 1,4-benzenedicarboxylate 131-11-3, Searched by John Dantzman 703-308-4488</p>				

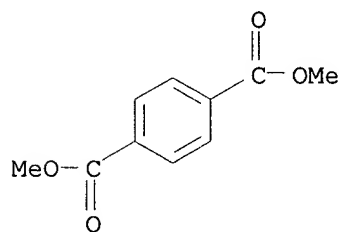
Dimethyl 1,2-benzenedicarboxylate **1459-93-4**, Dimethyl
1,3-benzenedicarboxylate

RL: RCT (Reactant)

(hydrogenation of, using catalysts contg. palladium
and a group VIII metal on alumina)

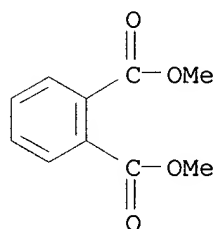
RN 120-61-6 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, dimethyl ester (9CI) (CA INDEX NAME)



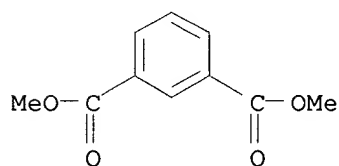
RN 131-11-3 HCAPLUS

CN 1,2-Benzenedicarboxylic acid, dimethyl ester (9CI) (CA INDEX NAME)



RN 1459-93-4 HCAPLUS

CN 1,3-Benzenedicarboxylic acid, dimethyl ester (9CI) (CA INDEX NAME)



IT **94-60-0P**, Dimethyl 1,4-cyclohexanedicarboxylate **4336-20-3P**
, Dimethyl 1,2-cyclohexanedicarboxylate **62638-06-6P**, Dimethyl
1,3-cyclohexanedicarboxylate

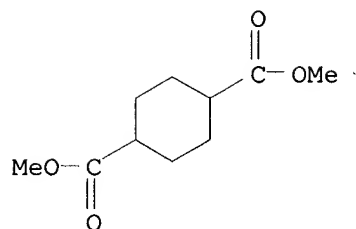
RL: SPN (Synthetic preparation); PREP (Preparation)

(prepn. of, by hydrogenation of di-Me benzenedicarboxylate using
catalysts contg. palladium and a group VIII metal
on alumina)

RN 94-60-0 HCAPLUS

CN 1,4-Cyclohexanedicarboxylic acid, dimethyl ester (6CI, 7CI, 8CI, 9CI)
(CA

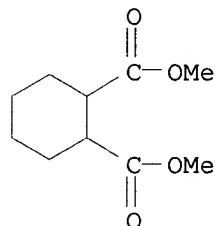
INDEX NAME)



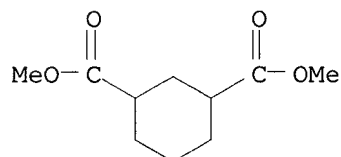
RN 4336-20-3 HCAPLUS

CN 1,2-Cyclohexanedicarboxylic acid, dimethyl ester (6CI, 7CI, 8CI, 9CI)
(CA

INDEX NAME)



RN 62638-06-6 HCAPLUS

CN 1,3-Cyclohexanedicarboxylic acid, dimethyl ester (6CI, 7CI, 9CI) (CA
INDEX NAME)

L70 ANSWER 26 OF 58 HCAPLUS COPYRIGHT 2000 ACS

AN 1993:497733 HCAPLUS

DN 119:97733

TI Catalytic hydrogenation of nitrile rubber in presence of organic
additives

IN Rempel, Garry L.; Guo, Xiang Yao

PA Polysar Rubber Corp., Can.

SO U.S., 5 pp.

CODEN: USXXAM

DT Patent

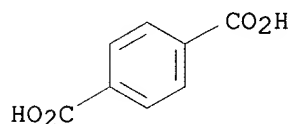
LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5208296	A	19930504	US 1992-939245	19920902
	CA 2101687	AA	19940303	CA 1993-2101687	19930730

Searched by John Dantzman 703-308-4488

EP 588097 A1 19940323 EP 1993-113337 19930820
 EP 588097 B1 19970115
 R: DE, FR, GB, IT
 JP 06184223 A2 19940705 JP 1993-232264 19930826
 PRAI US 1992-939245 19920902
 AB The hydrogenation of nitrile rubbers is streamlined and the wt. increase in the process is minimized and controlled by conducting the **hydrogenation** in the presence of a divalent **Ru catalyst** in an aq. emulsion and a solvent in the presence of mono- or dicarboxylic acids. Nitrile rubber emulsion in MeCOEt was **hydrogenated** in the presence of carbonyl chlorostyryl bis(tricyclohexylphosphine)**ruthenium catalyst** and chloroacetic acid for <3 h to give a degree of hydrogenation 99%.
 IT 100-21-0, 1,4-Benzenedicarboxylic acid, miscellaneous
 RL: MSC (Miscellaneous)
 (additives, for catalytic **hydrogenation** of nitrile rubbers)
 RN 100-21-0 HCAPLUS
 CN 1,4-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)

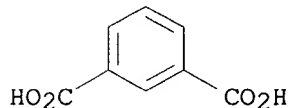


L70 ANSWER 27 OF 58 HCAPLUS COPYRIGHT 2000 ACS
 AN 1992:84368 HCAPLUS
 DN 116:84368
 TI Hydrogenative purification of isophthalic acid
 IN Ohta, Tazuo; Ohgoshi, Fumio; Tanaka, Kazuo; Yoshida, Terumasa; Motoyama, Ichihei
 PA Mitsubishi Gas Chemical Co., Inc., Japan
 SO Eur. Pat. Appl., 9 pp.
 CODEN: EPXXDW
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 457606	A1	19911121	EP 1991-304457	19910517
	EP 457606	B1	19941207		
	R: BE, DE, ES, FR, GB, IT				
	JP 04021653	A2	19920124	JP 1990-125437	19900517
	JP 2893860	B2	19990524		
	US 5189209	A	19930223	US 1991-701853	19910517
	ES 2067863	T3	19950401	ES 1991-304457	19910517
PRAI	JP 1990-125437		19900517		
AB	Highly pure isophthalic acid (I) is prepd. by treating crude I with H and Group VIII metal/activated C catalysts in AcOH contg. 1-5 wt% H ₂ O at 170-300.degree.. Hydrogenating I (purity 93.0%) on Pd/C with recycle of the filtrate to oxidn. gave I with purity 96.3%.				
IT	121-91-5P, Isophthalic acid, preparation				
	RL: PUR (Purification or recovery); PREP (Preparation) (purifn. of, by hydrogenation , catalysts for)				

Searched by John Dantzman 703-308-4488

RN 121-91-5 HCAPLUS
CN 1,3-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)

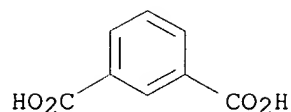


L70 ANSWER 28 OF 58 HCAPLUS COPYRIGHT 2000 ACS
AN 1990:552039 HCAPLUS
DN 113:152039
TI Purification of crude isophthalic acid
IN Schroeder, Hobe; Wittman, Ricky L.
PA Amoco Corp., USA
SO U.S., 6 pp. Cont. of U.S. Ser. No. 257,511, abandoned.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4933492	A	19900612	US 1989-419656	19891011
	CA 2011269	AA	19910901	CA 1990-2011269	19900301
	EP 445446	A1	19910911	EP 1990-302349	19900306
	EP 445446	B1	19940119		
	R: BE, DE, ES, FR, GB, IT, NL				
	AU 618882	B2	19920109	AU 1990-50759	19900306
	AU 9050759	A1	19910912		
	ES 2048427	T3	19940316	ES 1990-302349	19900306
	JP 03284644	A2	19911216	JP 1990-81466	19900330
	JP 2879925	B2	19990405		
PRAI	US 1988-257511	19881013			
	EP 1990-302349	19900306			

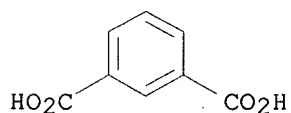
AB Crude isophthalic acid (I) soln. is purified by hydrogenation over 2 noble metal catalysts. A 20% I soln. was hydrogenated at 221.degree. and 40 psi H partial pressure (380 psig total pressure) over a catalyst compn. of 0.5% Rh-C on 0.5% Pd-C to give pure I showing b*-value of 0.87 (a measure of the yellowness-blueness attribute), fluorescence index of 0.36, and optical d. of 0.56 (at 340 nm), vs. 1.28, 0.39, and 0.81, resp., with Pd-C catalyst alone.

IT **121-91-5P**, Isophthalic acid, preparation
RL: PUR (Purification or recovery); PREP (Preparation)
(purifn. of, by **hydrogenation** over noble metals)
RN 121-91-5 HCAPLUS
CN 1,3-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)



L70 ANSWER 29 OF 58 HCAPLUS COPYRIGHT 2000 ACS
AN 1990:498233 HCAPLUS
DN 113:98233
TI Process and catalysts for the purification of crude isophthalic acid
IN Schroeder, Hobe
PA Amoco Corp., USA
SO U.S., 8 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4937378	A	19900626	US 1989-421560	19891013
AB	Polar solns. of crude isophthalic acid (I) are purified by hydrogenation in the presence of a Pt group metal hydrogenation catalyst to produce purified I having reduced color bodies, a predetd. color scale value, and predetd. optical d. The catalysts are supported on active carbon carrier particles and sepd. from the purified I by filtration.				
IT	121-91-5P , Isophthalic acid, preparation RL: PUR (Purification or recovery); PREP (Preparation) (purifn. of, by hydrogenation of polar solns. contg., for predetd. color scale value or optical d.)				
RN	121-91-5	HCAPLUS			
CN	1,3-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)				

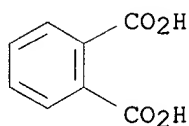


L70 ANSWER 30 OF 58 HCAPLUS COPYRIGHT 2000 ACS
AN 1990:497443 HCAPLUS
DN 113:97443
TI Preparation of phthalides
IN Hara, Yoshinori
PA Mitsubishi Kasei Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 02121976	A2	19900509	JP 1988-275885	19881031
	JP 08009607	B4	19960131		

Searched by John Dantzman 703-308-4488

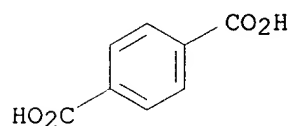
OS MARPAT 113:97443
AB The title compds. are prepd. by hydrogenation of arom. orthodicarboxylic acids or their anhydrides in presence of catalysts contg. **Ru**, org. phosphines, and conjugate bases of <2 pKa acids. Thus, autoclaving phthalic anhydride, **Ru** acetylacetonate, [Me(CH₂)₇]₃P, p-MeC₆H₄SO₃H (I), and dioxane at 200.degree. and 50 kg/cm² H for 3 h gave 84% phthalide, vs. 61% without I.
IT **88-99-3**, Phthalic acid, reactions
RL: RCT (Reactant)
(hydrogenation of, phthalide from, catalysts for)
RN **88-99-3** HCAPLUS
CN 1,2-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)



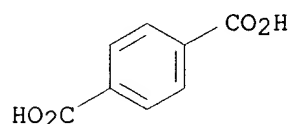
L70 ANSWER 31 OF 58 HCAPLUS COPYRIGHT 2000 ACS
AN 1990:458565 HCAPLUS
DN 113:58565
TI Highly active heterogeneous **rhodium catalysts** for the liquid-phase **hydrogenation** of aromatic and other unsaturated compounds under mild conditions
AU Timmer, Klaas; Thewissen, D. Harry M. W.; Meinema, Harry A.; Bulten, Eric J.
CS Inst. Appl. Chem., TNO, Zeist, 3700 AC, Neth.
SO Recl. Trav. Chim. Pays-Bas (1990), 109(2), 87-92
CODEN: RTCPA3; ISSN: 0165-0513
DT Journal
LA English
OS CASREACT 113:58565
AB Highly active heterogeneous **rhodium hydrogenation catalysts** were prepd. by pyrolysis of com. available Rh₄(CO)₁₂, highly dispersed on a suitable support, e.g., SrTiO₃, TiO₂-anatase, TiO₂-rutile, BaTiO₃ or SrZrO₃. The inactive materials initially obtained were activated by exposure to air at room temp. The activities of these catalysts were detd. in the liq.-phase hydrogenation of arom. compds. at atm. pressure and at low temps. (max. 70.degree.). They appear to be at least twice as active as catalysts prepd. from impregnated RhCl₃ or [RhCl(CO)₂]₂ on SrTiO₃ or a com. available catalyst (5% Rh on Al₂O₃). The gas-phase hydrogenation of benzene at room temp. takes place exothermally. Very high activities were also found in the liq.-phase hydrogenation of alkenes and alkynes, whereas low activities were shown in the hydrogenation of nitriles. Almost no activity was obsd. in the liq.-phase hydrogenation of nitro compds. and ketones. Catalysts prepd. from Rh₆(CO)₁₆ showed lower activities as compared with those prepd. from Rh₄(CO)₁₂. Hardly any activity was found using Ir₄(CO)₁₂ as starting carbonyl cluster and no activity was obsd. when Ru₃(CO)₁₂, Co₄(CO)₁₂, Os₃(CO)₁₂ or Fe₃(CO)₁₂ was used.

Searched by John Dantzman 703-308-4488

IT 100-21-0, Terephthalic acid, reactions 10028-70-3,
Disodium terephthalate
RL: RCT (Reactant)
(hydrogenation of, rhodium catalyst for)
RN 100-21-0 HCAPLUS
CN 1,4-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)

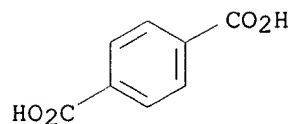


RN 10028-70-3 HCAPLUS
CN 1,4-Benzenedicarboxylic acid, disodium salt (9CI) (CA INDEX NAME)



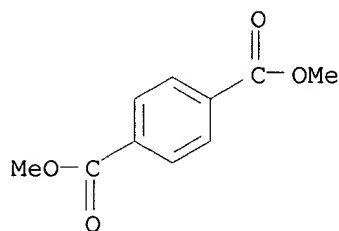
● 2 Na

L70 ANSWER 32 OF 58 HCAPLUS COPYRIGHT 2000 ACS
AN 1990:118066 HCAPLUS
DN 112:118066
TI Hydrogenation of aromatic carboxylic acids in the presence of
metal-polymeric catalysts
AU Neimerovets, E. B.; Tskhai, L. E.; Dedov, A. G.; Subbotin, O. A.;
Egazar'yants, S. V.; Karakhanov, E. A.
CS Mosk. Gos. Univ., Moscow, USSR
SO Vestn. Mosk. Univ., Ser. 2: Khim. (1989), 30(4), 403-5
CODEN: VMUKA5; ISSN: 0579-9384
DT Journal
LA Russian
AB Cyclohexanecarboxylic acids were prepd. in the hydrogenation of arom.
carboxylic acids in the presence of polycarboxylic acid-bound Pt or
Rh, with polyacrylic acid-Rh displaying the highest
catalytic activity. The Michaelis const. was detd. for benzoic acid in
the presence of the polyacrylic acid-Rh system.
IT 100-21-0, 1,4-Benzenedicarboxylic acid, reactions 120-61-6
RL: RCT (Reactant)
(hydrogenation of, in presence of polyacrylic acid-bound
rhodium)
RN 100-21-0 HCAPLUS
CN 1,4-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)



RN 120-61-6 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, dimethyl ester (9CI) (CA INDEX NAME)



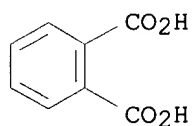
IT 88-99-3, 1,2-Benzenedicarboxylic acid, reactions

RL: RCT (Reactant)

(stereoselective **hydrogenation** of, in presence of polyacrylic acid-bound **rhodium**)

RN 88-99-3 HCAPLUS

CN 1,2-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)



L70 ANSWER 33 OF 58 HCAPLUS COPYRIGHT 2000 ACS

AN 1989:534929 HCAPLUS

DN 111:134929

TI Recovery of terephthalic acid from its recycle streams

IN Schroeder, Hobe

PA Amoco Corp., USA

SO U.S., 5 pp.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

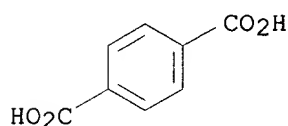
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4833269	A	19890523	US 1988-228995	19880805
AB	A process involves (A) hydrogenating the acidic impure mother liquor from a p-xylene oxidn. reactor with Rh/C catalyst at 250-600.degree. F to reduce the color bodies and impurities to cyclohexane-type compds., (B) recycling the hydrogenated mother liquor stream to the oxidn. reactor,				

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(C) oxidizing cyclohexane-type compds. to CO₂ in the reactor, and (D) recovering oxidn. catalysts and terephthalic acid in the mother liquor by crystn. Thus, a simulated oxidn. mother liquor contg. 98 mL H₂O, 900 mL glacial HOAc, 2 g 48% HBr, 20 g terephthalic acid, 1 g diphenic acid, and 1 g 4-carboxybiphenyl (I) was hydrogenated with 5% Rh/C and the resulting soln. monitored by liq. chromatog. contained 330 ppm I after 1 h and 90 ppm after 4 h, vs. 750 and 660, resp., with 5% Pd/C as catalyst.

IT **100-21-0P**, Terephthalic acid, preparation
 RL: PREP (Preparation)
 (recycle stream, purifn. of, by **hydrogenation** and oxidn.)

RN 100-21-0 HCAPLUS
 CN 1,4-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)



L70 ANSWER 34 OF 58 HCAPLUS COPYRIGHT 2000 ACS
 AN 1989:97565 HCAPLUS
 DN 110:97565
 TI Manufacture and use of supported Group VIIIIB metal catalysts for the hydrogenation of aromatic and other unsaturated compounds under mild conditions
 PA Nederlandse Organisatie voor Toegepast-Natuurwetenschappelijk Onderzoek, Neth.
 SO Neth. Appl., 22 pp.
 CODEN: NAXXAN
 DT Patent
 LA Dutch
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	NL 8700691	A	19881017	NL 1987-691	19870324
	EP 289061	A1	19881102	EP 1988-200457	19880310
	EP 289061	B1	19900801		
	R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	AT 55065	E	19900815	AT 1988-200457	19880310
	US 4831008	A	19890516	US 1988-171665	19880322
	JP 01007953	A2	19890111	JP 1988-67490	19880323
PRAI	NL 1987-691		19870324		
	EP 1988-200457		19880310		

AB The title catalysts are manufd. by depositing Group VIIIIB metal carbonyl clusters on a carrier under an inert (e.g., N) atm., followed by pyrolysis

at relatively low temps. (i.e., .ltoreq.300.degree.). The deposited material is activated by reaction with O. These catalysts have a high activity and are suitable for the hydrogenation of alkenes, alkynes, and arom. compds. under mild conditions. Rh₄(CO)₁₂ (0.23 g) was dissolved in 100 mL hexane under N and 25 g of predried (200.degree./1 mmHg; 2 h) SrTiO₃ was added. The suspension was slowly evapd. at 25.degree. under reduced pressure and the residue heated in vacuo to

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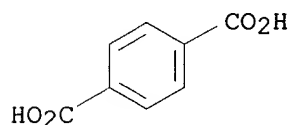
150.degree. for 2 h. After evapn., the powder was homogenized and stored in air. Using this catalyst, C₆H₆ was hydrogenated to cyclohexane at 30.degree./1 atm.

IT 100-21-0, 1,4-Benzenedicarboxylic acid, reactions 636-09-9
10028-70-3

RL: RCT (Reactant)
(hydrogenation of, catalysts for)

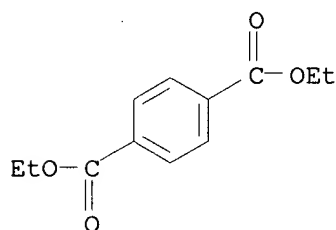
RN 100-21-0 HCAPLUS

CN 1,4-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)



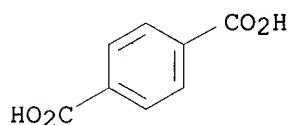
RN 636-09-9 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, diethyl ester (9CI) (CA INDEX NAME)



RN 10028-70-3 HCAPLUS

CN 1,4-Benzenedicarboxylic acid, disodium salt (9CI) (CA INDEX NAME)



● 2 Na

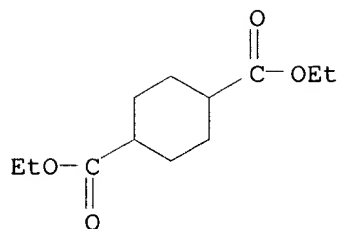
IT 72903-27-6P, Diethyl 1,4-cyclohexanedicarboxylate

RL: PREP (Preparation)

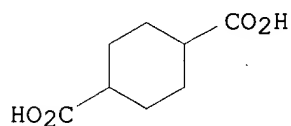
(manuf. of, by di-Et terephthalate hydrogenation, catalysts for)

RN 72903-27-6 HCAPLUS

CN 1,4-Cyclohexanedicarboxylic acid, diethyl ester (6CI, 7CI, 9CI) (CA INDEX NAME)



IT 1076-97-7P, 1,4-Cyclohexanedicarboxylic acid
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (manuf. of, catalysts for)
 RN 1076-97-7 HCAPLUS
 CN 1,4-Cyclohexanedicarboxylic acid (8CI, 9CI) (CA INDEX NAME)



L70 ANSWER 35 OF 58 HCAPLUS COPYRIGHT 2000 ACS
 AN 1989:95980 HCAPLUS
 DN 110:95980
 TI Process for removal of high molecular weight impurities in the
 manufacture

of purified terephthalic acid

IN James, David E.

PA Amoco Corp., USA

SO U.S., 6 pp.

CODEN: USXXAM

DT Patent

LA English

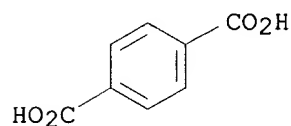
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4782181	A	19881101	US 1987-58142	19870604
AB	Crude terephthalic acid (I) prepd. by catalytic liq.-phase oxidn. of p-xylene is purified by hydrogenating aq. I (concn. .gtoreq.5%) over Group VIII noble metal catalysts at 450-600.degree.F/10-200 psi, removing the catalyst, crystg. I and filtering at 300-450.degree.F, and recycling the mother liquor to oxidn. Stirring 1.0 g crude I in 1 L H2O with 200 mg Pd black and H at 300.degree.F/300 psi gave the following results (impurity, concn. in ppm after 0, 15, and 60 min given): 2,4',5-biphenyltricarboxylic acid, 1516, 85, 11; 2,6-fluorenedicarboxylic acid, 516, 8, blank; diphenylmethanetricarboxylic acid, 197, 33, blank; 4,4'-methylenedibenzoic acid, 117, 15, 2; 3,4'-biphenyldicarboxylic acid (II), 2298, 105, 15; 4,4'-II, 932, 218, 49; and 2,6-fluorenedicarboxylic acid, 1637, 105, blank.				

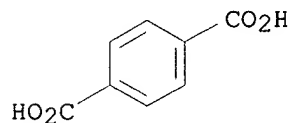
IT 100-21-0P, Terephthalic acid, preparation

Searched by John Dantzman 703-308-4488

RL: PUR (Purification or recovery); PREP (Preparation)
(purifn. of, by catalytic **hydrogenation** in water)
RN 100-21-0 HCAPLUS
CN 1,4-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)



L70 ANSWER 36 OF 58 HCAPLUS COPYRIGHT 2000 ACS
AN 1988:610484 HCAPLUS
DN 109:210484
TI Promoting effect of acids on the formation of ethylene glycol from
synthesis gas catalyzed by the **rhodium**-tricyclohexylphosphine
system
AU Ohgomori, Yuji; Mori, Shoichiro; Yoshida, Shinichi; Watanabe, Yoshihisa
CS Cent. Res. Lab., Mitsubishi Petrochem. Co. Ltd., Ibaraki, 300-03, Japan
SO J. Mol. Catal. (1987), 43(1), 127-36
CODEN: JMCADS; ISSN: 0304-5102
DT Journal
LA English
AB Carboxylic acids, C₆F₅OH, and H₃PO₄ (HX) facilitate the formation of
HOCH₂CH₂OH from synthesis gas in the presence of the **Rh**
-tricyclohexylphosphine (TCP) system. Complexes recovered from the
resultant solns. were RhX(CO)(TCP)₂, which are stable to
repeated use. The catalytically active species or its immediate
precursor
is proposed to be HRh(CO)₂(TCP)₂ on the basis of **IR**
spectroscopic anal. at a synthesis gas pressure of 280 bar.
IT 100-21-0, p-Phthalic acid, uses and miscellaneous
RL: CAT (Catalyst use); USES (Uses)
(**rhodium catalyst** contg., for **hydrogenation**
of carbon monoxide)
RN 100-21-0 HCAPLUS
CN 1,4-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)

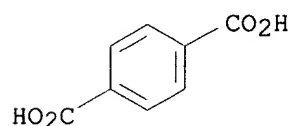


L70 ANSWER 37 OF 58 HCAPLUS COPYRIGHT 2000 ACS
AN 1988:531246 HCAPLUS
DN 109:131246
TI Preparation of cyclohexanedicarboxylic acids
IN Lillwitz, Lawrence D.
PA Amoco Corp., USA
SO U.S., 6 pp.

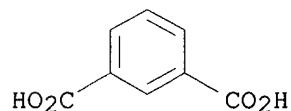
Searched by John Dantzman 703-308-4488

CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

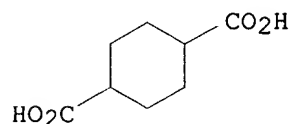
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4754064	A	19880628	US 1983-544725	19831024
AB	Cyclohexanedicarboxylic acids are prepd. at increased rates by hydrogenating benzenedicarboxylic acid solns. over supported Rh catalysts and recycling a portion of the product stream. By this method, isophthalic acid was hydrogenated to 1,3-cyclohexanedicarboxylic acid over Rh/C catalyst at 100.degree./100-15000 psig in .apprx.2 h.				
IT	100-21-0, Terephthalic acid, reactions 121-91-5, Isophthalic acid, reactions				
	RL: RCT (Reactant)				
	(hydrogenation of, catalysts for)				
RN	100-21-0 HCAPLUS				
CN	1,4-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)				



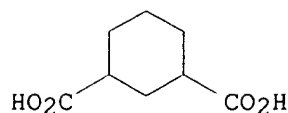
RN 121-91-5 HCAPLUS
CN 1,3-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)



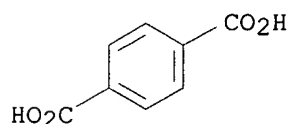
IT 1076-97-7P, 1,4-Cyclohexane dicarboxylic acid 3971-31-1P
, 1,3-Cyclohexane dicarboxylic acid
RL: IMF (Industrial manufacture); PREP (Preparation)
(manuf. of, catalyst for)
RN 1076-97-7 HCAPLUS
CN 1,4-Cyclohexanedicarboxylic acid (8CI, 9CI) (CA INDEX NAME)



RN 3971-31-1 HCAPLUS
CN 1,3-Cyclohexanedicarboxylic acid (7CI, 8CI, 9CI) (CA INDEX NAME)



L70 ANSWER 38 OF 58 HCAPLUS COPYRIGHT 2000 ACS
AN 1988:7852 HCAPLUS
DN 108:7852
TI **Hydrogenation** of carbon monoxide by **ruthenium catalysts**: a synergistic effect of chloride salts and weak acids
AU Yoshida, Shinichi; Mori, Shoichiro; Kinoshita, Hisao; Watanabe, Yoshihisa
CS Cent. Res. Lab., Mitsubishi Petrochem. Co., Ltd., Ami, 300-03, Japan
SO J. Mol. Catal. (1987), 42(2), 215-27
CODEN: JMCADS; ISSN: 0304-5102
DT Journal
LA English
AB Hydrogenation of CO by a Ru-bis(triphenylphosphine)iminium chloride-acid system was examd. A synergistic effect was obsd. for a combination of halide salts and weak acids. Ethylene glycol, MeOH, and EtOH were the major products. Mechanistic studies suggested that a single catalytic species, presumably the hydroxymethyl-metal intermediate, was responsible for a major part of the glycol and MeOH. Pos. effects of moderately polar solvents and weak acids indicated the ion-paired nature of the catalytic species.
IT 100-21-0, Terephthalic acid, uses and miscellaneous
RL: USES (Uses)
(carbon monoxide **hydrogenation** in presence of **ruthenium catalysts** and)
RN 100-21-0 HCAPLUS
CN 1,4-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)



L70 ANSWER 39 OF 58 HCAPLUS COPYRIGHT 2000 ACS
AN 1987:554893 HCAPLUS
DN 107:154893
TI Purification of crude terephthalic acid
IN Schroeder, Hobe; James, David Eugene
PA Amoco Corp., USA
SO Eur. Pat. Appl., 19 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 222500	A1	19870520	EP 1986-307680	19861003
	EP 222500	B1	19900103		

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R: AT, BE, CH, DE, ES, FR, GB, IT, LI, LU, NL, SE

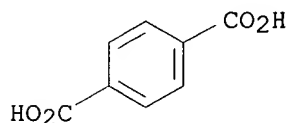
AT 49194	E	19900115	AT 1986-307680	19861003
CN 86106971	A	19870408	CN 1986-106971	19861007
CN 1020894	B	19930526		
JP 62129248	A2	19870611	JP 1986-238988	19861007
US 4892972	A	19900109	US 1989-344657	19890427

PRAI US 1985-785322 19851007
 US 1986-905766 19860910
 EP 1986-307680 19861003

AB The title process comprises hydrogenation of aq. solns. of crude terephthalic acid (I) at 100-350.degree. in successive **Group VIII** metal/C and Pd/C catalyst beds with recovery of purified I by recrystn. A crude I stream contg. .apprx.2700 ppm 4-carboxybenzaldehyde was hydrogenated at 280.degree./975 psig with H partial pressure 50 psi using Rh/C and Pd/C successive catalyst beds, giving an effluent contg. 2433 ppm toluic acid and 1595 ppm BzOH vs. 3227 and 705, resp., for Pd/C catalyst only.

IT **100-21-0P**, Terephthalic acid, preparation
 RL: PUR (Purification or recovery); PREP (Preparation)
 (purifn. of, **hydrogenation** in multilayer catalyst beds for)

RN 100-21-0 HCAPLUS
 CN 1,4-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)



L70 ANSWER 40 OF 58 HCAPLUS COPYRIGHT 2000 ACS
 AN 1987:67829 HCAPLUS
 DN 106:67829
 TI Purification of terephthalic acid to relatively low levels of 4-carboxybenzaldehyde and catalyst therefor
 IN Schroeder, Hobe
 PA Amoco Corp., USA
 SO U.S., 8 pp.
 CODEN: USXXAM
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4629715	A	19861216	US 1985-785321	19851007
	EP 222499	A1	19870520	EP 1986-307679	19861003
	EP 222499	B1	19910102		
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, LU, NL, SE				
	AT 59630	E	19910115	AT 1986-307679	19861003
	CN 86106988	A	19870408	CN 1986-106988	19861007
	CN 1019112	B	19921118		
	JP 62129247	A2	19870611	JP 1986-238987	19861007
PRAI	US 1985-785321		19851007		
	EP 1986-307679		19861003		

Searched by John Dantzman 703-308-4488

AB Aq. solns. of crude terephthalic acid are purified to low 4-carboxybenzaldehyde concns. under hydrogenation conditions by using a catalyst bed comprising a 1st layer of active carbon contg. Pd and a 2nd layer of active C contg. Rh. The method extends the useful life of the Pd-C catalyst.

IT 100-21-0P, Terephthalic acid, preparation
RL: PUR (Purification or recovery); PREP (Preparation)
(purifn. of, by **hydrogenation**, layered catalysts for)

RN 100-21-0 HCAPLUS

CN 1,4-Benzenedicarboxylic acid (9CI) (CA INDEX NAME)

